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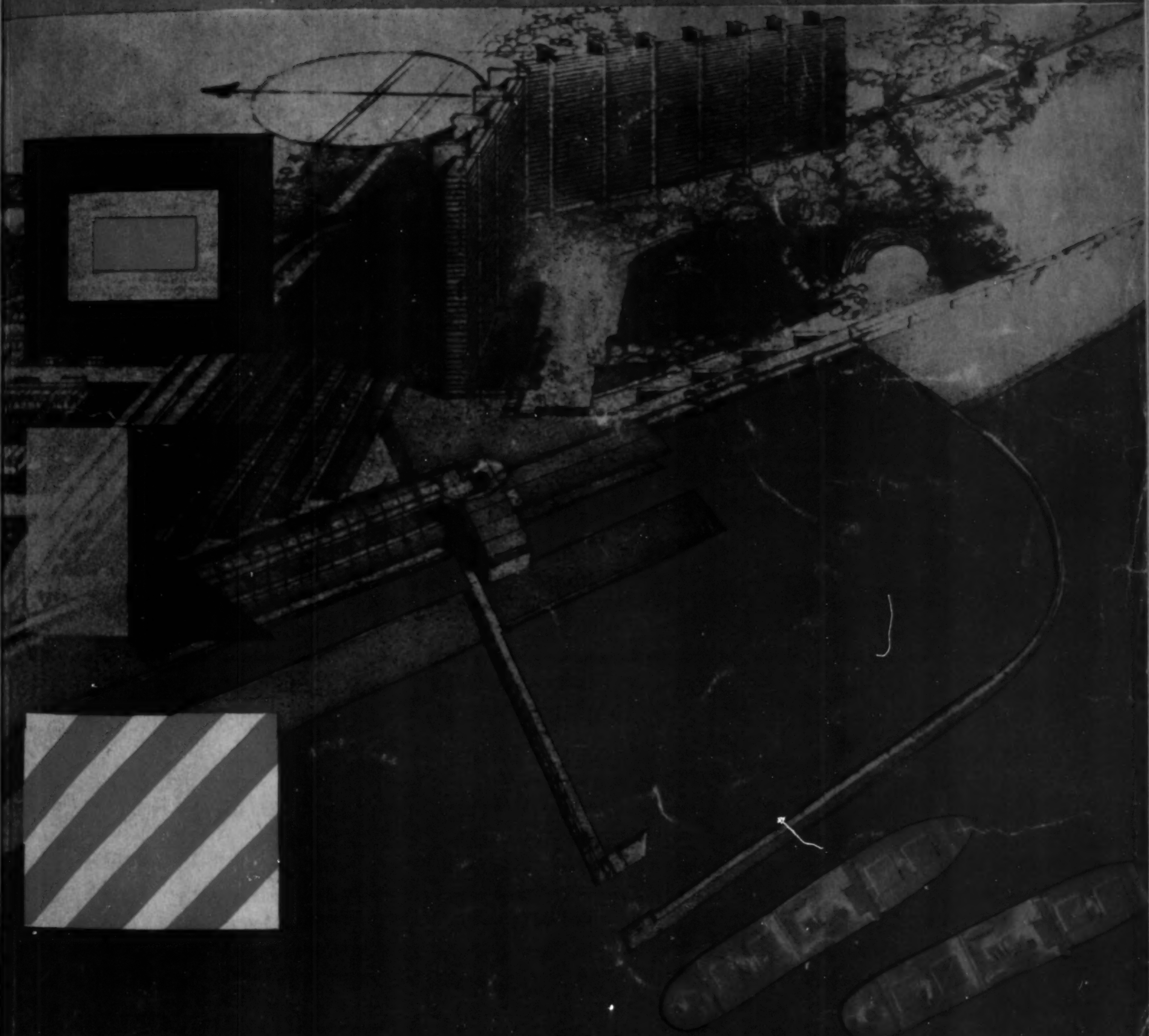
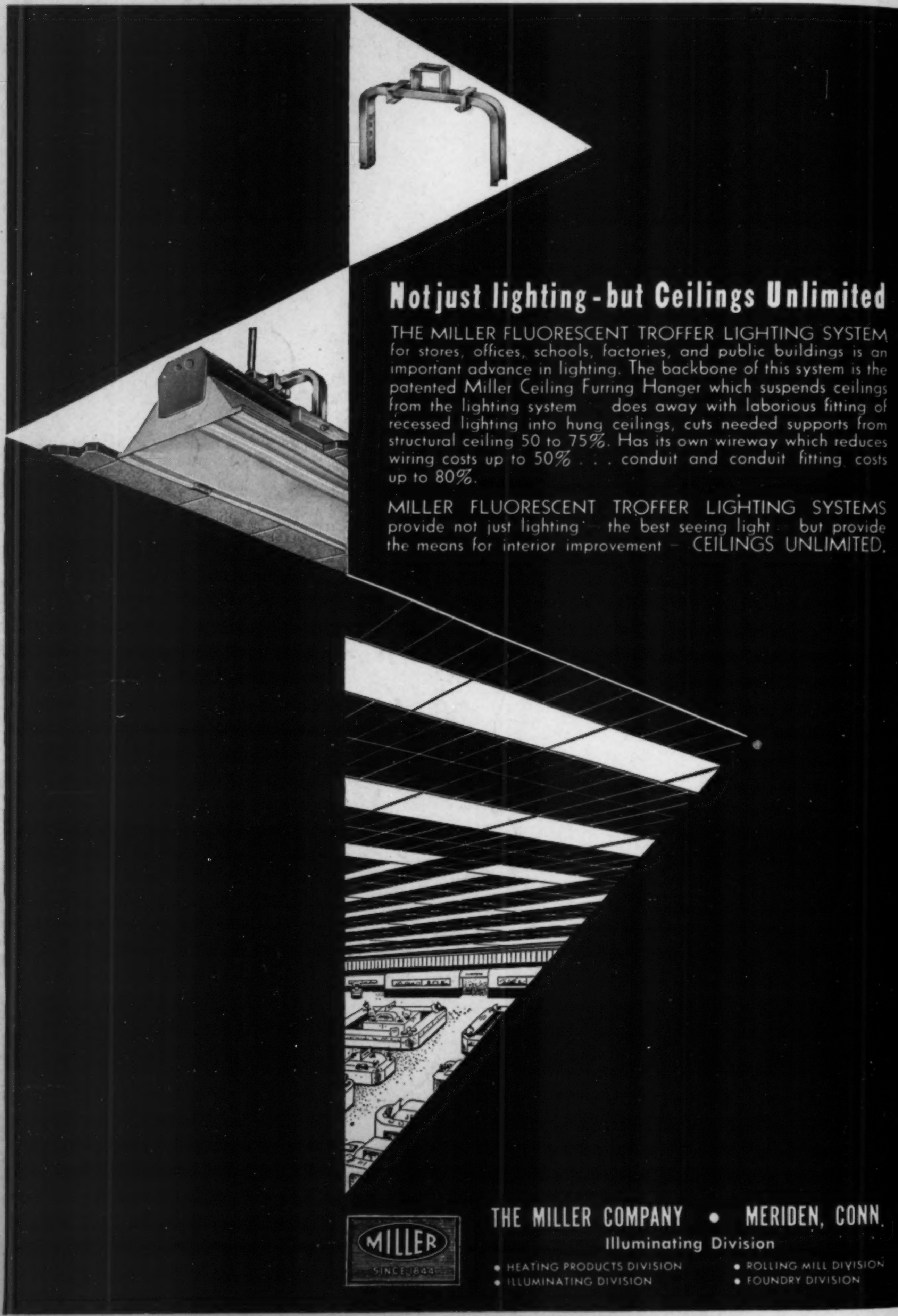


SEPTEMBER 1946

TOMORROW'S SEAPORT BY NEUTRA



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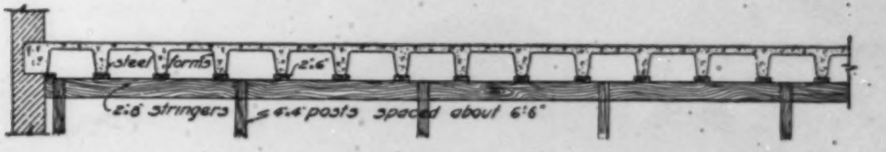
CECO

First in Steelform

In construction products **CECO ENGINEERING**



Ceco Engineers in 23 Offices are always ready to help you in the preparation of designs and estimates. They can help you cut costs and save time. Feel free to call on Ceco for service on your jobs. The above drawing illustrates one type of open wood centering recommended by Ceco.

n *Service . . .*

Meyer Steelform construction is economical for store and office buildings, residences, apartments, hotels, schools, hospitals, garages and manufacturing buildings—in fact, all structures with lighter loads and longer spans.

A nation-wide independent survey indicates that architects, contractors and engineers prefer concrete joist construction two-to-one for the following reasons:

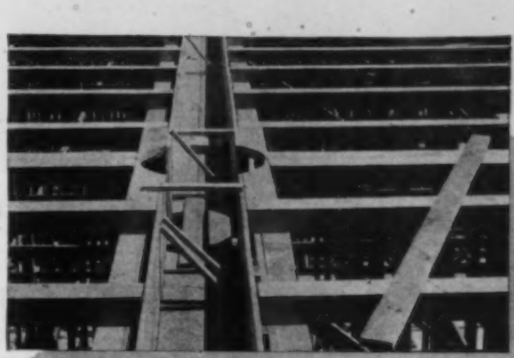
1. **Lower cost construction**
2. **Speeds up building**
3. **Provides rigid, strong, permanent, sound-proof buildings**
4. **Assures fire-resistive construction**

ASK YOUR CECO SERVICE HEADQUARTERS FOR COMPLETE TECHNICAL DATA, OR WRITE CECO'S GENERAL OFFICES . . .

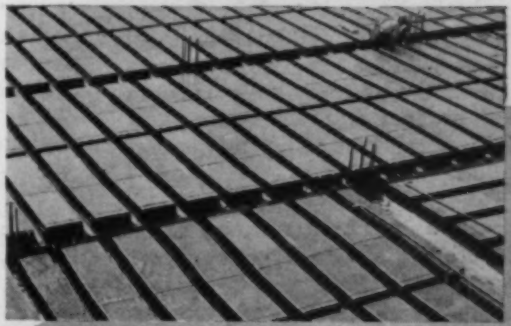
It is universally recognized that concrete joist construction has definite natural advantages. It eliminates much of the concrete below the neutral axis which is both ineffective and largely wasted due to the weakness of concrete in tension. The amount of concrete used is held to the minimum necessary for any given span or live load. Naturally, this saving of dead load has its economical effect on all parts of the structure.

Meyer Steelform construction is the most economical of all methods of forming concrete joists because the joists and thin slab between them are formed with cores of *removable* steelforms supported on a skeleton centering. Once the concrete has set, the steelforms are removed and re-used many times, thus permitting a nominal rental charge for each use. Meyer Steelforms are handled on a rental basis only, leased to contractors and owners for specific jobs.

CECO STEEL PRODUCTS CORPORATION
GENERAL OFFICES: 5701 W. 26th Street, Chicago 50, Illinois
Offices, warehouses and fabricating plants in principal cities



Simple open-wood centering makes Meyer Steelform construction economical and fast. The centering may be re-used from floor to floor. This eliminates extra lumber and saves time.



Here is a Ceco job illustrating precision formed joists. Note the constant width and accurate alignment from one end of the building to the other. Ceco workmen know how to eliminate concrete leakage and insure proper execution of the structural design.

OTHER CECO CONSTRUCTION PRODUCTS

METAL WINDOWS AND DOORS • METAL FRAME SCREENS • METAL WEATHERSTRIPS STEEL JOISTS • STEEL ROOF DECK • METAL LATH AND ACCESSORIES • REINFORCING STEEL • HIGHWAY PRODUCTS • CORRUGATED ROOFING AND ACCESSORIES

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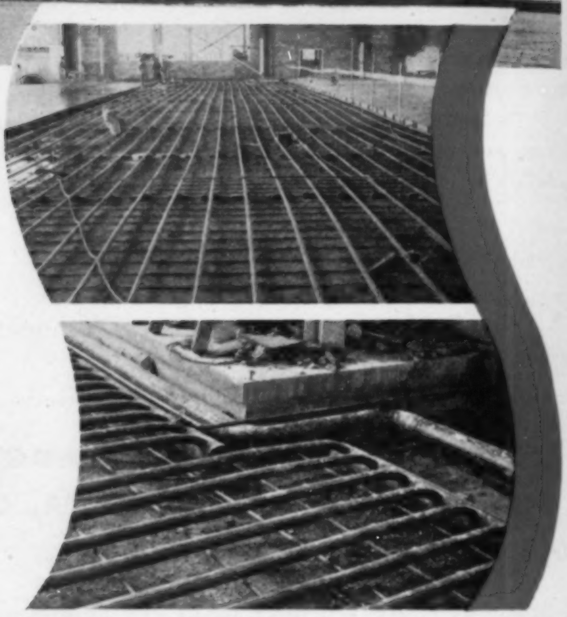

This new hangar is heated from the ground up with

BYERS RADIANT HEATING

This new hangar, built by Packard Motor Company at the Willow Run (Michigan) Bomber Plant uses a modern method to solve an old problem.

Heating a hangar has always presented major difficulties. Floor slab construction is invariably used. Ceilings are generally high. Doors are large, are opened frequently and left open for extended periods. Giffels & Vallet, the engineers, recognized the unique ability of Byers Radiant Heating to take care of all these conditions, and it was installed.

The illustrations give a pretty complete story of installation methods. Standard black 1¼-inch Byers Wrought Iron Pipe was welded into proper lengths, and bent to drop into headers at an angle. After testing, a concrete slab was poured. Bassler-Carter were the contractors on the job.

The effectiveness of Byers Radiant Heating in hangars has been confirmed by winter performance in other installations. In one of these, the engineers reported that except in the coldest weather, one of the two doors was left open, yet comfort was still maintained for the workmen inside. The fact that Byers Radiant Heating can keep occupants warm in buildings with high infiltration and rapid air changes is one of its most valuable advantages.

Byers Wrought Iron makes several vital contributions to a successful radiant heating system. It is readily formed and welded, which speeds installation. It has high heat emission. It has a coefficient of expansion almost identical with concrete, which gives protection against thermal cracking of the floor slab. And its resistance to the corrosive conditions encountered has been demonstrated hundreds of times over, during long years of service. This corrosion resistance is due to wrought iron's unusual structure. Tiny fibers of glass-like silicate slag, threaded through a body of high-purity iron, halt and diffuse corrosive attack, and also help anchor the initial protective film, which shields the underlying metal.

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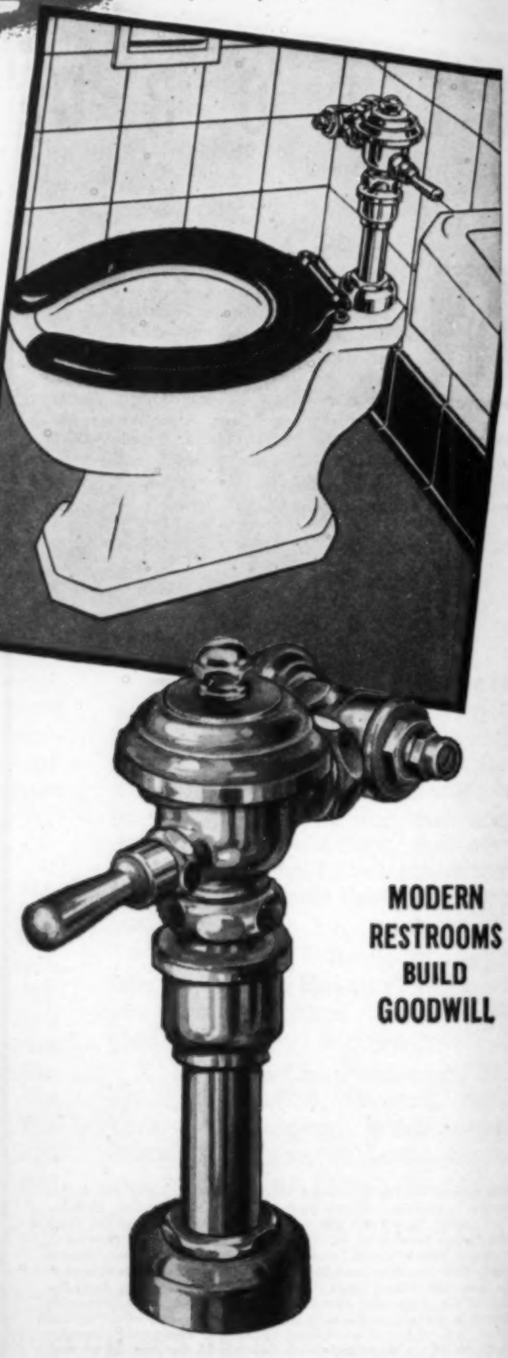

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THE RECORD REPORTS

Housing Bill Dies • Land Agency Set Up • Hospital Survey and Construction Act Passed • CPA Channels Supplies, Holds Non-Residential Building In Check

Labor Day, bringing an end to most government vacations, found Washington settling down to weigh carefully the last-minute Congressional actions in late July and early August.

Literally hundreds of bills which had lain listless in committee or had merely ambled along raced for the deadline. Many landed on the President's desk and were signed into the law of the land. Those that didn't now have to start from scratch in the new Congress.

Housing Bill Dies

In the latter category is the General Housing Bill—i.e., the Wagner-Ellender-Taft Bill which, before it died, split the House Banking Committee and became the center of intense, conflicting pressures. This is the measure which, among other things, would make NHA permanent, aid localities in redeveloping blighted areas and in low-rent housing, cover housing on farm and in rural areas, and provide yield insurance, and which private enterprise charges would eventually lead toward a government housing
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missioners. Plans are to cover not only uses of the land but also maximum rentals.

The new land agency is not to build or operate housing. However, if private capital fails to step into the picture, public redevelopment corporations may then take over and go ahead.

Permanent NHA Is Out

Of the President's three Reorganization Plans, Congress, by Senate action, rejected the proposed lumping of the housing agencies under one head, which, in effect, would have carried out the first part of the General Housing Bill. The Senate, accepting the other two plans, smacked this one down by a vote of 45 to 31. This was a curious twist, since the Senate earlier had approved the General Housing Bill incorporating this provision.

Hospital Building Aided

Congress did put through in its last
hectic hours the Hospital Survey and
Construction Act

cover 33⅓ per cent of the costs.

Special consideration is required for rural areas in determining the priority of projects within a state on the basis of need. Similarly, recognition is given to areas with small financial resources. Stress is laid, too, on health centers as well as hospitals. To quote the House Committee report on the legislation: "As the modern hospital is essential for diagnosis and treatment of illness, the public health center is necessary as the proper workshop for the modern health department."

Also in a late July action, the Congress provided for a hospital center in the District of Columbia, authorizing $35,000,000 for this purpose.

Congress Reorganizes

The Congressional Reorganization law will cause shifts in action on construction matters before Congressional Committees. Public and private housing remain under the Banking and Currency Committees but the membership of those groups will be reshuffled.

A new Committee on Public Works will be set up in both the House and Senate to handle action on public buildings, roads, dams, bridges, flood control
and river and harbor impro
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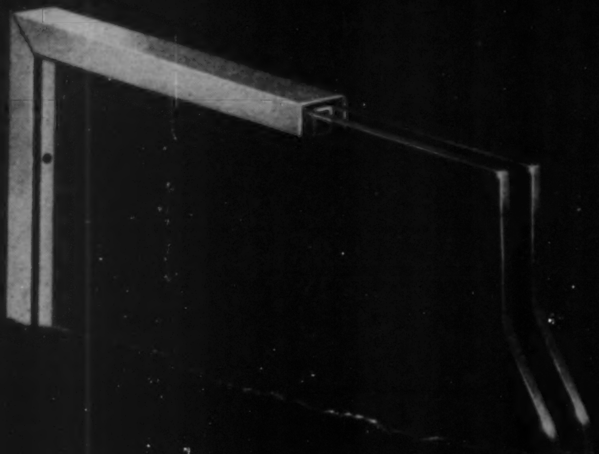

QUESTIONS and ANSWERS

"Pittsburgh's" New Window

QUESTION . . .

What is TWINDOW?

ANSWER . . .

Twindow is the newest development in insulating windows. It is a simple, prefabricated window unit, consisting of two or more panes of glass with a hermetically sealed air space between and a sturdy protecting frame of stainless steel.

QUESTION . . .

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QUESTION . . .

Just how well does TWINDOW insulate?

ANSWER . .

Twindow reduces heat loss through windows to less than half that experienced with a single pane of glass. This insulation decreases the load on heating or air-conditioning equipment.

QUESTION . .

What effect does TWINDOW have on room comfort?

ANSWER . . .

Twindow makes areas close to windows just as comfortable as other parts of the room. It minimizes downdrafts and helps to keep temperature and humidity at proper levels.

QUESTION . . .

Can TWINDOW help eliminate the nuisance of fogged windows?

ANSWER . . .

Yes. Except under extreme conditions, Twindow's sealed air space prevents condensation on the glass, assuring clear vision. And since no dirt or dust can reach its sealed-in surfaces, Twindow is as easy to clean as an ordinary window.

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THE RECORD REPORTS

(Continued from page 7)

Building Report Asked

Building materials, in official opinion, probably will remain under price and production control longer than the rest of the national economy. Even in writing the law to extend OPA, Congress made specific note of this. It asked the President to list by next April the commodities "including housing accommodations" in such critically short supply as to need price controls after next June.

Of course, the Congress, set on getting rid of OPA, specified that the President recommend some other unit of government to handle the controls.

OPA Delay Hurts Housing

Congressional delay in extending OPA upset the housing program in many ways, both directly and indirectly. It directly affected, for instance, the premium payments schedules. The Inter-Agency Steering Committee on these payments, after studying the new law and checking on market conditions during the OPA lapse, decided to retain the July 1 opening date only on the convector radiator regulation. The regulations on hardwood flooring and on cast iron soil pipe, originally scheduled for July 1, were delayed to August 1.

Building material companies were kept in a state of uncertainty all during the month and many builders were likewise hampered.

That building costs in the second half of the year will run on a higher average goes without saying. As OPA got its life renewed, it announced a long list of ceiling price increases, including 19 in the category of lumber and building materials.

New HH Dividing Line

NHA, in announcing a new "dividing line" standard whereby at least half of all HH priorities must be at rental or sales prices below that line, had to await the decision on OPA before it could determine the future of the line. Under the plan, monthly rather than quarterly quotas are set to make the flow of materials more orderly. First preference continues for veterans on homes they intend to occupy; then comes rental housing below the dividing line.

Guaranteed Markets On

The guaranteed market program, getting under way in July, swung more fully into operation in August. However, officials recognize that broadest effects of prefabrication stimulus will not show up until the 1947 building year. Care will be exercised, they say, to keep out inferior products and fly-by-night producers.

CPA Channels Supplies

The Civilian Production Administration labored during the summer doldrums to channel more and more materials into housing. It recommended that the government release from its stocks 50 million pounds of aluminum ingots; it channeled all, instead of the original 70 per cent, of certain surplus government-owned building materials into housing; it gave preference on iron foundry schedules to iron castings for home construction; it broadened its priority system to speed the output of electrical wiring devices; it studied the need of dipping into the government's copper stockpile for three months to aid housing.

Other Building Reined

Besides these things, CPA held a tight check rein on non-residential building applications. From March 26 to July 18 it denied 22,246 requests valued at $946 million compared to approval of 39,290 valued at $1.58 billion.

It announced a survey to determine the effect of non-housing construction on the materials supply, showing that the dollar value of critical materials going into commercial and industrial construction amounts to only 3 per cent of total costs. Of the total, 55 per cent goes to labor and 42 per cent to other materials such as steel, limestone, plate glass and concrete, which are all in relatively good supply.

Model Code Studied

The Department of Commerce has under way a survey to compile data for a model basic code that could be adapted to local conditions. Points to be considered in the analysis include minimum standards, unnecessary safeguards, restrictive provisions, and administrative provisions to permit new materials and improved methods.

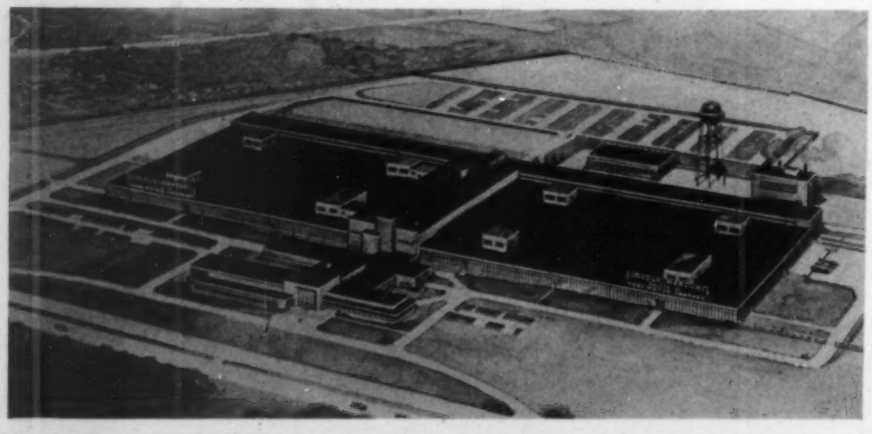
Cities will be furnished with the results of the study, which will show code deficiencies. Provisions that are unnecessary and increase construction costs will be indicated.

Survey on Repairs

In a new booklet, "The Pattern of Expenditures for Non-farm Residential Repair and Maintenance," the Department of Commerce advises that homeowners' expenditures to repair their homes in the years 1929–44 averaged two-thirds as much annually in the United States as was spent to build new homes.

The average annual expenditure for

(Continued on page 12)



One of three similar Kahn-designed assembly plants under construction for Ford Motor Co.

BUILDING NOTES

Ford Plants

Three new plants are under construction for the Ford Motor Co., one at Metuchen, N. J., one at St. Louis, Mo., and one at Atlanta, Ga. All three are assembly plants, and all are from the boards of Albert Kahn Associated Architects and Engineers, Inc.

The Metuchen plant, typical of the three, will have approximately 650,000 sq. ft. of floor space. Main assembly building is one story, with steel frame, brick and sash walls and cement tile roof. The office building, roughly H-shaped, is also one story, with stone facing in the central portion. Boiler house and oil house are separate, and a large parking area is provided for employees. Contractors are the Wigton-Abbott Corp.

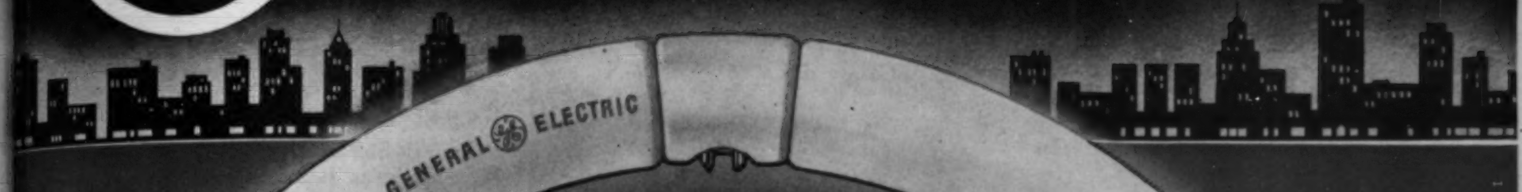
Ampule Plant

Employees and visitors who enter the new ampule building of the Winthrop Chemical Co., Inc., at Rensselaer, N. Y., must pass through a de-dusting chamber where blowers and suction devices remove all lint and dust. There are two such chambers in the basement, near the employees' locker room.

Every known scientific development is said to have been taken advantage of

(Continued on page 152)

CIRCLINE opens New Horizons!



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PITTSBURGH 22, PA. . . . . 535 Smithfield St., GRant 3272
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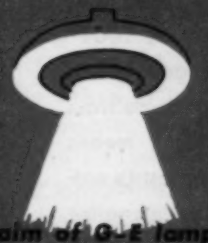
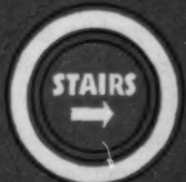
General Offices: NELA PARK, CLEVELAND 12, OHIO

Shielded Circline Fluorescent Lamps combined with G-E Projector lamps in adjustable fittings, make a new type of decorative luminaire.





G-E Circline lamps may be used for unusual edge lighting effects around signs and ornamental plaques.

The constant aim of G-E lamp research is to make G-E lamps

Stay Brighter Longer!

G-E LAMPS

GENERAL ELECTRIC

once over lightly, Joe!

SILV-A-KING FLUORESCENT LIGHTING UNITS

FEATURING A PORCELAIN-ENAMEL FINISH THAT INSURES *LIFETIME* HIGH REFLECTIVITY . . . LOWERS MAINTENANCE COSTS BY REDUCING "CLEANING TIME" . . .

Next time you're considering lighting fixtures, get the "inside story". Look *inside* the fixture . . . if it's snowy white, gleaming, with a hard lifetime surface that's been fired on at 1600° Fahrenheit . . . chances are you're looking at a SILV-A-KING unit. That's important to you from an efficiency-production angle, for it means more and better illumination . . . nearest to natural daylight. It's vital, too, from a maintenance viewpoint, because a quick "once-over" with a damp cloth leaves the reflector surface as brilliantly bright as the day it left the firing ovens.

Among the many features of SILV-A-KING "Specification" Fluorescent Units:

Starters mounted behind lamp holders are easily accessible.

A half turn of the Camloc permits removal of reflector from hood—no tools—no loose parts.

For all the facts on SILV-A-KING fluorescent units ask for a copy of Bulletin #45FS.

RLM

HOME OF

SILV-A-KING

Lighting equipment

BRIGHT LIGHT REFLECTOR CO., INC. • Fairfield and State—Bridgeport 5, Conn.

THE RECORD REPORTS

(*Continued from page 10*)

repair and maintenance in the 16-year period was $1,166,000,000 — of which about 92 per cent represented work done on non-farm homes — compared with an average of $1,741,000,000 spent annually to build new dwellings.

Construction Estimated

John R. Steelman, who replaced John W. Snyder as Reconversion Director, threw light on the construction picture in his first report to the President. Boosting construction estimates for the year from $14 billion to $17 billion, he made clear that a large part of the increase was in non-residential construction.

Other points:

1. Production of essential building materials continues upward.
2. Authorizations for non-residential construction will be held to a minimum.
3. Issuance of priorities is being related more closely to housing program goals.
4. Guaranteed markets for prefabricated houses are expected to boost the program substantially.
5. More units are being sought in the low-rent ranges.

New Materials Cited

He cited new materials which, on the basis of an NHA survey, "have been found useful — though on a small scale, since they cannot get into high volume production for some time."

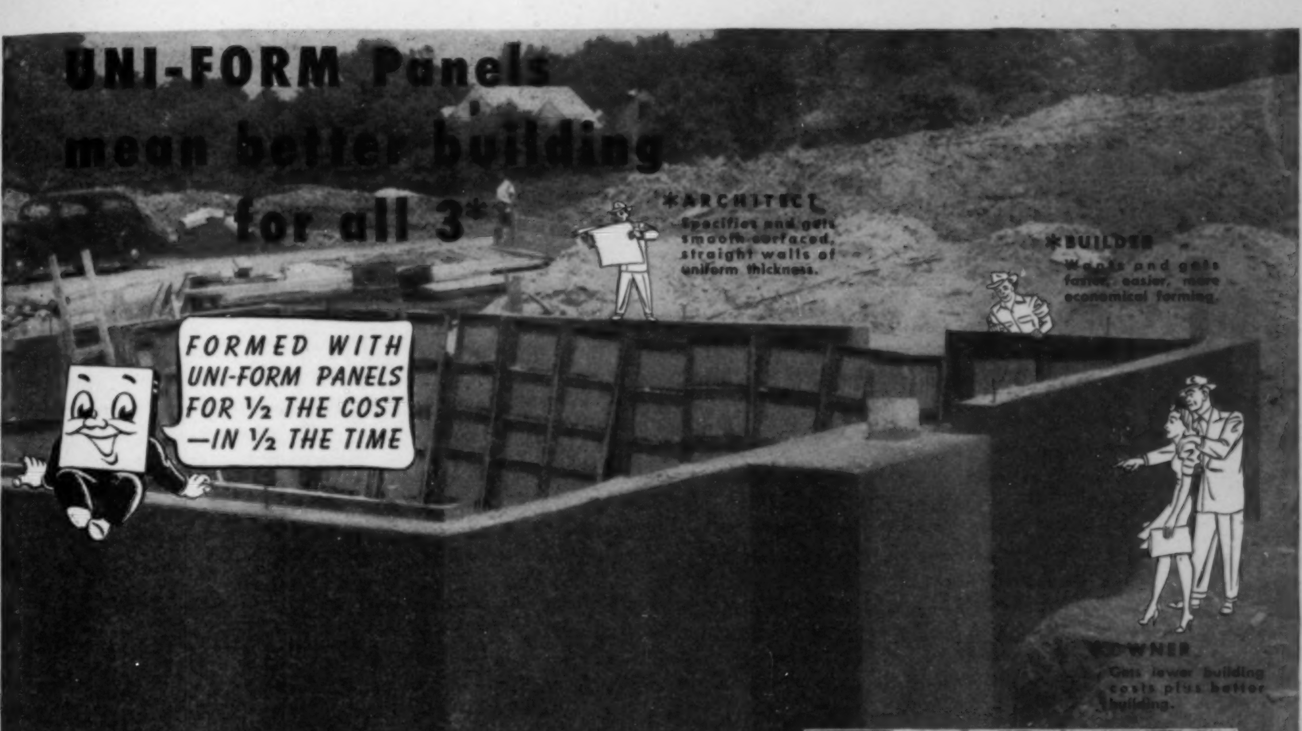
Here is the list of new materials as presented in his report:

"Precast concrete panels, which will make it possible to build concrete houses without scarce equipment: new aggregates for use in concrete mixing, such as slag, wood chips, waste paper, and agricultural waste; pre-stressed floors and floor panels; wallboards made of plastics and chemically-treated fibrous waste; wallboards which are fireproof and have high insulating properties; wallboards reinforced with noncritical metal sheeting, and wall panels consisting of two outside 'skins' separated by a structural frame of lumber or metal or held together by an insulating core, and designed to save the lumber required for inside framing."

Odds and Ends

Odds and ends of import from the National Capital include an FHA announcement that it will seek $1 billion in rental housing out of the contemplated $2 billion of mortgage insurance under the Veterans Housing Act. . . . Another FHA announcement of broadened regulations to make "country" homes eligible for insured financing. . . . A forecast from CPA that lumber production this

(*Continued on page 14*)


UNI-FORM Panels mean better building for all 3*
*ARCHITECT
Specifies and gets smooth surfaced, straight walls of uniform thickness.
*BUILDER
Wants and gets faster, easier, more economical forming.
FORMED WITH UNI-FORM PANELS FOR ½ THE COST —IN ½ THE TIME
*OWNER
Gets lower building costs plus better building.

1. Prefabricated fillers provide faster erection.
2. Lightweight, easy to handle panels can be positioned and locked in place by one man. Four men erect complete form in 4 hours.

UNI-FORM Foundation Panels are a complete, ready-to-use system of panel forms which are faster to erect, easier to strip and require alignment on one side only.

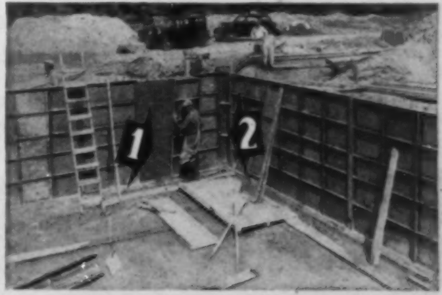
The UNI-FORM Tie locks panels into a tight, rigid, accurately spaced assembly which prevents grout seepage and the need for extra finishing. Smooth, straight foundations—no fins—no irregular surfaces and no varying wall thickness are assured.

Material cost of the System is less than 3¢ per square foot of form area, based on from 75-100 re-uses of plywood facing. The welded all-steel frames are virtually indestructible.

Forming cost is less than 6¢ per square foot of form area†—this includes erection, stripping, cleaning, oiling and moving to the next site. *No other method is so economical.*

UNI-FORM Panels are furnished in 2′0″x6′0″, 2′0″x7′0″ and 2′0″x8′0″ sizes. Ties are available to handle any standard or special wall thickness.

†*Actual job cost studies.*



1. Clean surfaces—no fin. Stripping is quickly, easily done by one man.
2. Simplified method of forming inside corners.

UNIVERSAL FORM CLAMP Company

Concrete Form Specialists for 34 Years

Founded 1912

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Chicago 51

Better Service Wherever You Build

WRITE for complete details, prints and cost analysis.

1. Alignment and bracing required on one side only.
2. Working area is "clean"—no obstructions.

Concrete Forms • Form Ties • Form Systems

Count with us . . THE DOZENS OF PLACES FOR TREATED LUMBER

Wherever you look in this Brooklyn water front scene, you'll find a place where pressure-treated lumber should be used. Transit shed roofs and floors, supporting and fender piling, dock and pier superstructures, even gang planks and stack bottoms . . . all these will last longer built with treated lumber.

Treatments for wood to meet all water front conditions are available through American Lumber & Treating Company. *Wolmanized* Lumber* protects against decay and termite attack. Timbers treated with *Minalith** fire retardant are flameproof. *Creosoting* guards against marine borer attack below the water line.

Pressure Treatment ASSURES THOROUGH PROTECTION

Pressure treatment under exacting laboratory control drives these protective materials deep into the wood. Hundreds of millions of feet of lumber so treated is in service all over the world. The excellent performance recorded is evidence of its dependability.

AMERICAN LUMBER & TREATING COMPANY
CREOSOTING
FLAMEPROOFING
WOLMANIZING

*Registered trademarks

1679 McCORMICK BUILDING, CHICAGO 4, ILLINOIS

(*Continued from page 12*)

year will reach 32 billion board feet. . . . A report from the Commerce Department describing a "high early strength" cement used for construction work in Germany. . . . A Bureau of Standards statement that insulation in exposed walls and ceilings or roofs plus storm or double windows can cut heat requirements of many houses by more than half. . . . NHA announcement of the sale of three Defense Homes Corporation properties in Washington, D. C., to a group of business men at a profit to the government of over $2 million. . . . Another NHA announcement that 576,721 houses and apartments were authorized for construction with priorities assistance in the first half of the year.

◆ ◆ ◆

WHAT THEY SAY . . .

About the W-E-T Bill

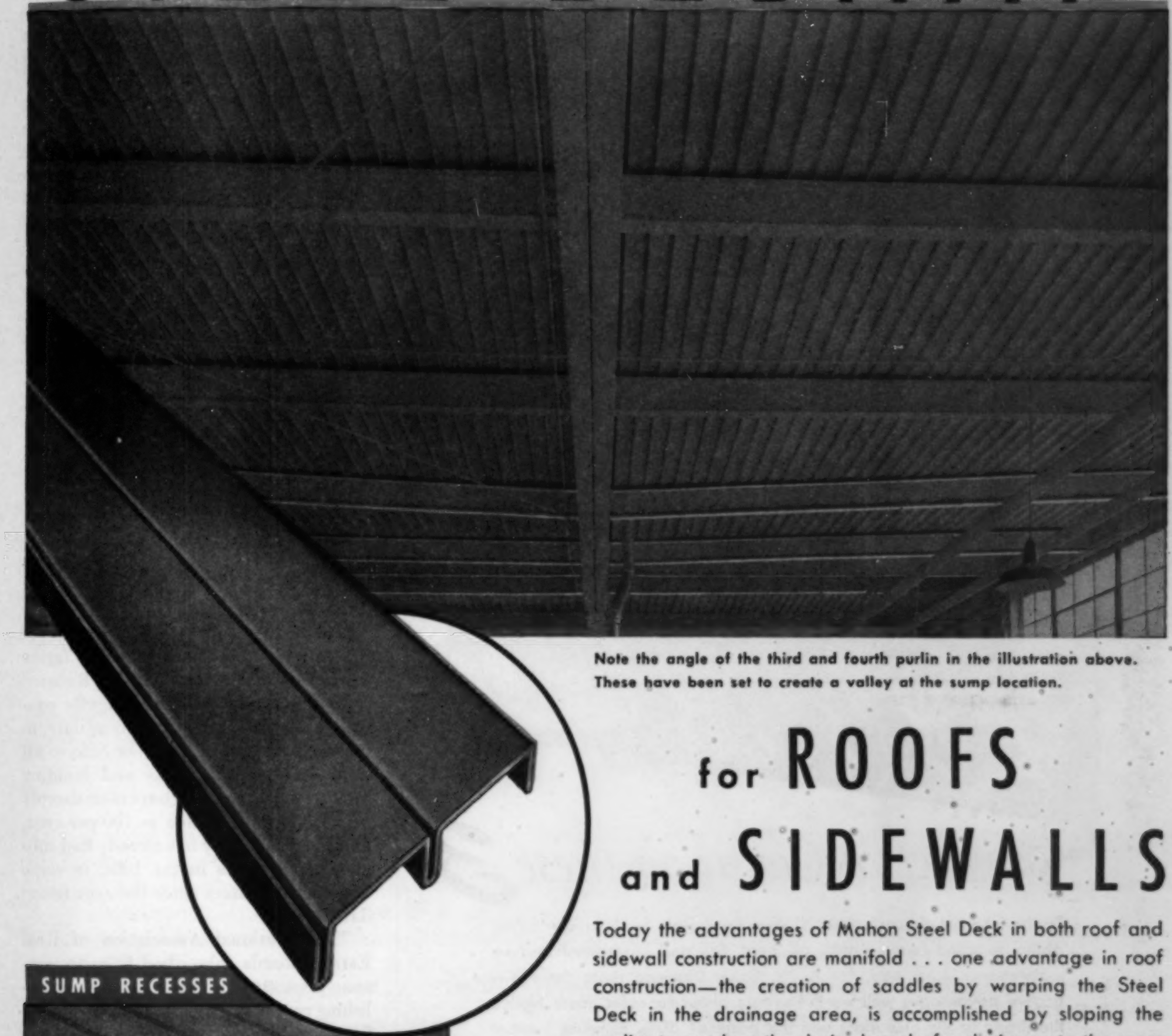
"The Wagner-Ellender-Taft long range housing bill is a major step towards the birth of a new leviathan — the all-powerful state that would swallow us all up. . . . With $6 billion of federal credit equal to the assessed valuation of 10 states, the bureaucrats will build half a million homes and will thus control two million of our American votes. Not many occupants of public housing will vote against a government that gives them a roof at half price. Two million vest-pocket votes are enough to destroy the party system in our country." — *Herbert U. Nelson, executive vice president, National Association of Real Estate Boards.*

"We have been willing to grant to our government vast powers in war emergencies or in peacetime crisis but always these vast powers have been for very limited periods of time and very carefully guarded. This bill throws all restraint to the wind — makes it a permanent all time affair. It certainly is the critical point — the continental divide as it were. . . . If this bill is ever enacted it seems fair to conclude that the critical point has been reached, that we are leaving behind tried and true economy and have determined to go ahead full speed with the permanent nationalization in an all powerful state of the housing and the shelter of the nation . . ."

"There is intellectual dishonesty in presenting this bill as a veterans' housing bill. Not by the remotest stretch of the imagination can it immediately and at once relieve veterans' housing needs. It was not originally conceived as a veterans' housing bill, but rather dwelt with long term policy such as welfare housing,

(*Continued on page 16*)

STEEL DECK...



Note the angle of the third and fourth purlin in the illustration above. These have been set to create a valley at the sump location.

SUMP RECESSES

for ROOFS and SIDEWALLS

Today the advantages of Mahon Steel Deck in both roof and sidewall construction are manifold . . . one advantage in roof construction—the creation of saddles by warping the Steel Deck in the drainage area, is accomplished by sloping the purlins to produce the desired angle for drainage to the sump location. This requires no cutting, fitting, or additional Steel Deck Plates, and it eliminates the necessity of constructing saddles of other material. Sump Recesses, illustrated at the left, can be furnished with Mahon Steel Deck to fit any sump or meet any roof pitch requirement. For complete information on Mahon Steel Deck, see Sweet's, or call in a Mahon engineer.

THE R. C. MAHON COMPANY

Home Office and Plant, Detroit 11, Mich. • Western Sales Division, Chicago 4, Illinois
Representatives in all Principal Cities

Manufacturers of Steel Deck for Roofs, Sidewalls, Ceilings, Floors, Partitions and Doors. Also, Roof Sumps and Recesses, Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

Mahon Sump Recesses have been designed for use with Mahon Steel Deck. They are manufactured in 14 gauge steel and welded to the surrounding Steel Deck in a manner which adequately reinforses the opening.

MAHON

HERE'S THE ANSWER
FOR HEAVY
TRAFFIC FLOORS
1
GRIP WITHOUT A SLIP!
2
EASY TO CLEAN!
3
EASY TO MATCH!

So you can Count on these 3

To the inherent characteristics of steel floor plate (such as durability, ability to stand tough traffic, oil, heat, fire and crackproof and no maintenance cost) add, for A. W. Super-Diamond these three distinctive advantages well worth knowing about for safer floors. Notice the shape of the elevations and the pattern? 30% minimum contact area with the shoe. Sloping sides that maintain "sharpness" of contact, resist dirt collection, make for easier cleaning, better draining. And a pattern that matches more easily with less scrap! These are reasons why alert architects, builders, product engineers, and purchasing agents are insisting on AW Super-Diamond Floor Plates.

Write For 16 page Booklet L-33 Giving Helpful Information on Weight Per Square Foot and Maximum Sizes. Alan Wood Steel Company, Conshohocken, Pa.

AW SUPER-DIAMOND

FLOOR PLATES THAT GRIP

A Product of **ALAN WOOD STEEL COMPANY**

(*Continued from page 14*)

financing technique, and many other things which had nothing directly to do with veterans' housing. The framers and supporters of this bill at a later date attempted to play politics with the needs of veterans by taking on the designation that this was a 'Veterans' Housing Bill.' The subterfuge is so transparent that it needs little analysis. None of the projects contemplated by the bill can take place until we get into a period of abundant skilled labor supply and to a period of availability of large quantities of material. As a matter of fact, the bill was conceived as a depression measure to cushion unemployment by the projecting of large public projects." — *Arthur W. Binns, president, National Home and Property Owners Foundation.*

FAIR RENTS ASKED

Realtors and the millions of small property owners throughout the country will renew immediately their battle for a fair measure of relief from the oppressive rent control reestablished by Congress in the OPA revival act, according to Boyd T. Barnard, president of the National Association of Real Estate Boards.

Rents have been the only single factor in the national economy, Mr. Barnard said, which have remained rigidly controlled since their original freeze date, in most cases March 1, 1942, or before. All items of operating costs and building maintenance, however, have risen sharply in price, some as much as 100 per cent, and the typical city has already had substantial increases in tax bills, in some cases several times since the rent freeze date.

"The National Association of Real Estate Boards subscribed fully to wartime price control and assisted in establishing rent control," Mr. Barnard states. "Real estate boards throughout the country held the line on rents and prevented skyrocketing during the interim when OPA was dead. They have always cooperated 100 per cent. Consequently, it was a bitter disappointment to them that Congress failed to provide equitable relief for them, as it did for other groups in the economy. They have no alternative but to continue their fight for a just measure of relief."

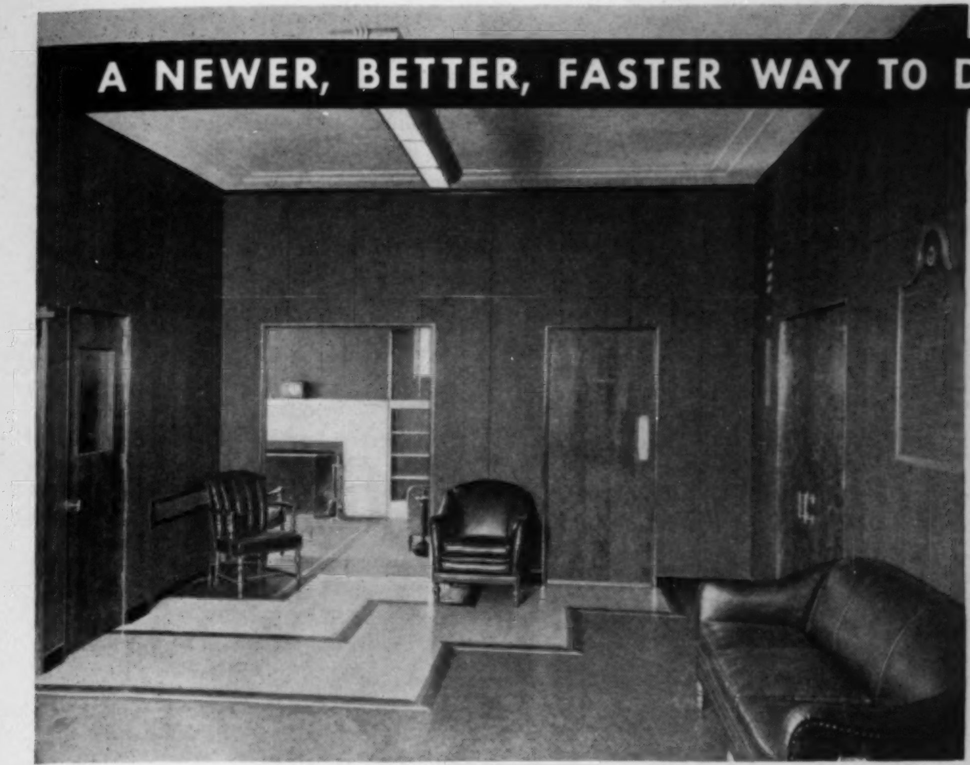
ASKS HOUSING CENSUS

An up-to-date and impartial census of housing is needed to help the construction industry make intelligent plans for meeting the country's housing needs, says J. Ernest Fender, president of the Structural Clay Products Institute.

Although Congressional conferees have

(*Continued on page 18*)

A NEWER, BETTER, FASTER WAY TO DIVIDE SPACE



This 10-Minute Demonstration Brings New Ideas in Partitioning and Paneling

Write or phone the nearest Distributor listed at the right and let him show you the 10-minute demonstration of M/P Metlwal Paneling and Movable Partitions. By use of a few standardized parts and fittings, M/P Metlwals eliminate the need for plaster in new construction . . . and permit fast, clean, simple installation in dividing space. They combine rich beauty, quiet and fire resistance with low initial cost and permanent economy.

Pre-Fabricated . . . Pre-Decorated

Made in lifelike wood grains and soft color finishes . . . providing an all-flush surface from floor to ceiling . . . eliminating the need for filler boards of other materials at ends or above the cornice level . . . M/P Metlwals of Bonderized steel make possible an endless variety of new, modern decorative effects. And you can use these distinctive interiors for executive, factory and general offices, stores, banks, theatres, hotels, hospitals, schools, residences and other buildings of every kind.

Write or Phone For Demonstration

Get in touch with the nearest M/P Distributor and let him bring the demonstration to your office. Also, for your A. I. A. file, send for booklet No. 35-H-6, containing Metlwal specifications, drawings and installation photographs. Address: Martin-Parry Corporation, Fisher Bldg., Detroit 2, Michigan. Plants: Toledo, Ohio; York, Penna.

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MP
PRODUCTS

METLWALS

ALL-FLUSH PANELING
MOVABLE PARTITIONS

66 Years of Service

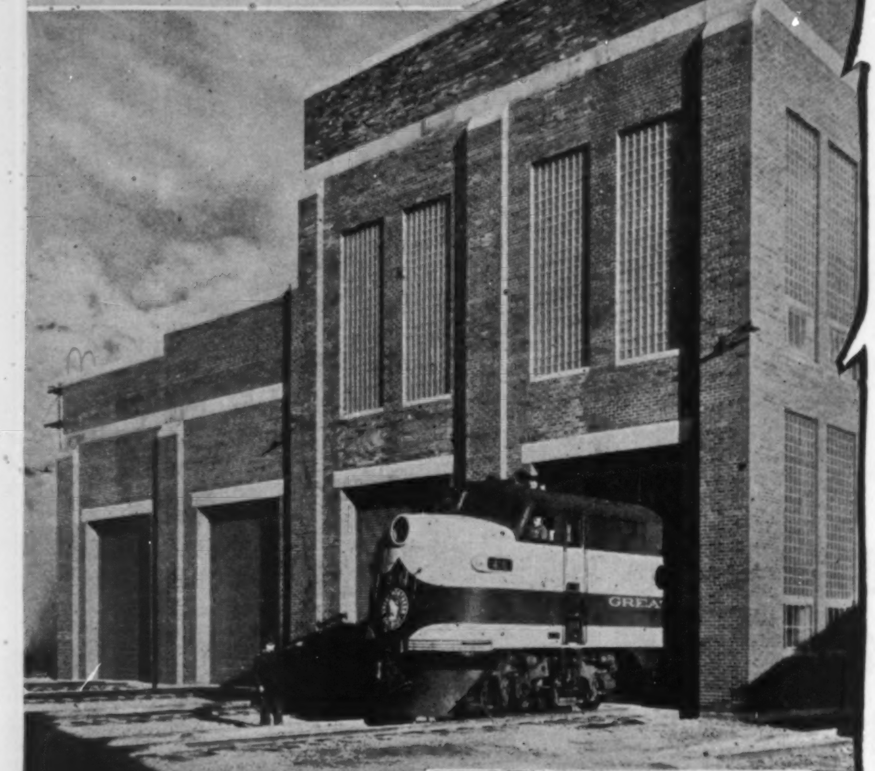
ENGINEERING AND ERECTING SERVICE AND WAREHOUSE STOCKS FROM COAST-TO-COAST

Call your nearest M/P Distributor

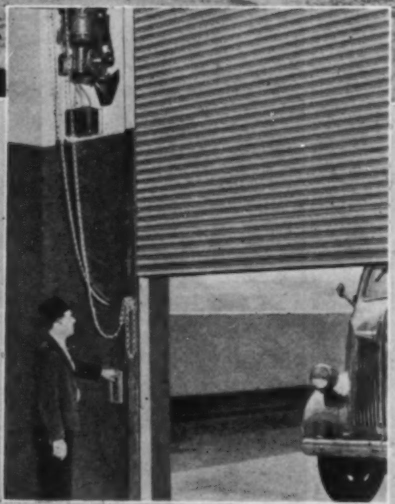
ALABAMA	Birmingham	Acousti Engineering Co.
ARKANSAS	Little Rock	Acoustics & Specialties
CALIFORNIA	Los Angeles	The Harold E. Shugart Co.
	Oakland Sacramento San Francisco	Western Asbestos Co.
COLORADO	Denver	Lauren Burt, Inc.
CONNECTICUT	Hartford	The C. A. Bader Co.
DISTRICT OF COLUMBIA	Washington	John H. Hampshire, Inc.
FLORIDA	Jacksonville	Acousti Engineering Co. of Fla.
GEORGIA	Atlanta	Acousti Engineering Co.
ILLINOIS	Decatur	Hugh J. Baker & Co.
INDIANA	Evansville Ft. Wayne Indianapolis Wabash	Hugh J. Baker & Co.
KENTUCKY	Louisville	E. C. Decker & Co.
LOUISIANA	New Orleans	Acoustics & Specialties
MARYLAND	Baltimore	John H. Hampshire, Inc.
MASSACHUSETTS	Boston	Pitcher & Co., Inc.
MICHIGAN	Detroit	R. E. Leggette Co.
	Grand Rapids	Leggette-Michaels Co.
MINNESOTA	Minneapolis	Insulation Sales Co.
MISSOURI	Kansas City St. Louis	Henges Company, Inc.
NEW JERSEY	Elizabeth	Jacobson & Co., Inc.
NEW MEXICO	Albuquerque	The Jay Grear Corp.
NEW YORK	Albany Buffalo Jamestown Rochester Syracuse	Collum Acoustical Co.
	New York City	Jacobson & Co., Inc.
NORTH CAROLINA	Charlotte	Acousti Engineering Co.
OHIO	Cincinnati	E. C. Decker & Co.
	Cleveland	The Mid-West Acoustical & Supply Co.
OREGON	Portland	Asbestos Supply Co. of Oregon
PENNSYLVANIA	Philadelphia	The W. M. Moyer Co.
	Pittsburgh	Harry C. Leezer Co.
TENNESSEE	Knoxville Nashville	Len Herndon Co., Inc.
	Memphis	Acoustics & Specialties
TEXAS	Dallas Houston	S. W. Nichols Co.
	El Paso	Jay Grear Corp.
UTAH	Salt Lake City	Lauren Burt, Inc.
VIRGINIA	Richmond	John H. Hampshire, Inc.
WASHINGTON	Seattle Spokane Tacoma	Asbestos Supply Co.
WEST VIRGINIA	Huntington	E. C. Decker & Co.
WISCONSIN	Milwaukee	Edward T. VerHalen, Inc.

Where modern speed and efficiency are *most* important, you'll find

KINNEAR STEEL ROLLING DOORS



Kinnear Rolling Doors in one of the modern shops of the Great Northern Railway Company, St. Paul Minnesota.



You keep plant efficiency from slumping at doorways when you install Kinnear Rolling Doors. They combine all the space- and time-saving advantages of *coiling upward action* with the protective strength of *all-metal construction.* The smooth, easy action of Kinnear's famous interlocking-slat curtain speeds door traffic. The entire door coils quickly out of the way *above* the opening. All surrounding floor and wall space is fully usable at all times. The opened door is always completely safe from damage by wind or vehicles. Its rugged metal construction defies wind, storms *and* intruders . . . resists fire . . . stands up under years of punishing use. And with Kinnear Rolling Doors, you get *maximum* benefits from the motorized, push-button operation (wire remote control stations if desired) offered by Kinnear Motor Operators. Write for complete data on Kinnear Rolling Doors — today!

KINNEAR ROLLING DOORS

THE KINNEAR MANUFACTURING CO.
Factories: 1860-80 Fields Ave., Columbus 16, O.
1742 Yosemite Ave., San Francisco 24, California

THE RECORD REPORTS

(*Continued from page 16*)

eliminated funds for a housing census from the Department of Commerce appropriation bill, Mr. Fender points out, "it is to be hoped that some way can be found to authorize the Bureau of the Census to collect the needed data in the immediate future. . . .

"We need to know how many additional homes are needed, where and when they are needed, what the price ranges should be, how many rental units are required, and other pertinent facts. . . . The construction industry can do a far more effective job of planning to meet the housing needs of veterans and others if it has reliable data on which to base decisions than if it is compelled to guess at requirements on the basis of data which is out of date or supplied by prejudiced sources."

AT THE COLLEGES

Instructors Needed

Increased enrollments at the schools of architecture will require additional instructors for the fall semester, the Association of Collegiate Schools of Architecture reports. The need is urgent, particularly for instructors to teach architectural design and structural courses.

Those qualified and interested in teaching positions should send their personnel records to Prof. Paul Weigel, Secretary, Association of Collegiate Schools of Architecture, Dept. of Architecture, Kansas State College, Manhattan, Kansas.

Assistantship Open

The State Board of Agriculture governing Michigan State College has approved one half-time graduate assistantship in the Department of Landscape Architecture for the academic year 1946–47. This assistantship is at the rate of $800 for candidates for the Master's degree and $1,000 for those who have the Master's degree (M.S. or M.A.) or its credit equivalent and who are candidates for the Doctor of Philosophy or Doctor of Education.

Appointment is to be based particularly upon the candidate's scholastic record and his promise as a graduate student. For further information address the Dept. of Landscape Architecture, Michigan State College, East Lansing, Mich.

New Leaflets

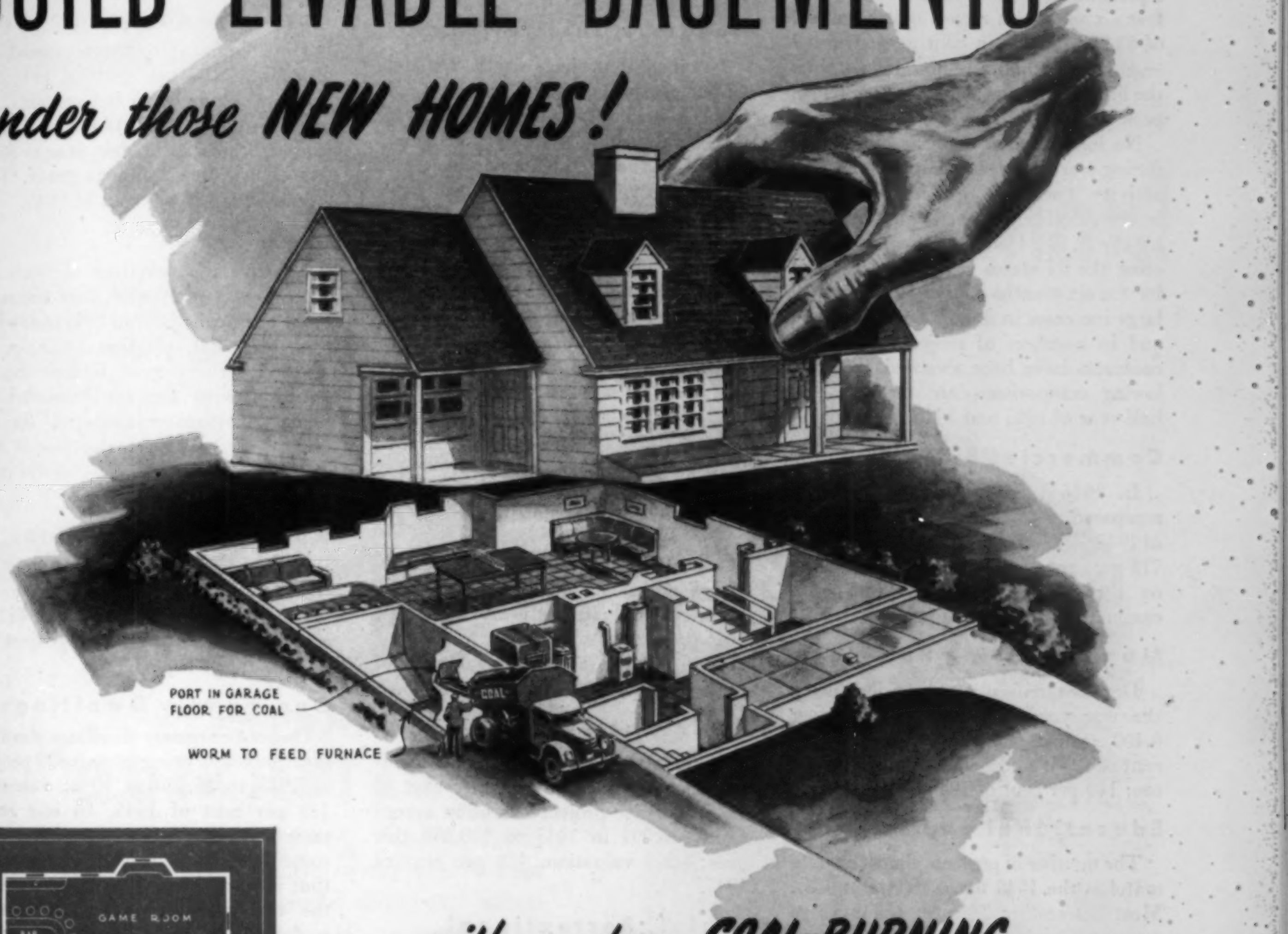
Several new circulars have been added to the University of Illinois' growing library of planning leaflets:

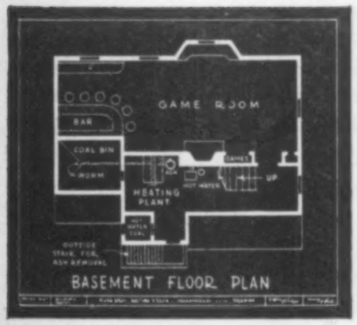
1. "Planning for Electricity in the Home" (Circular Series No. G4.0), a nontechnical discussion of the electric

(*Continued on page 144*)

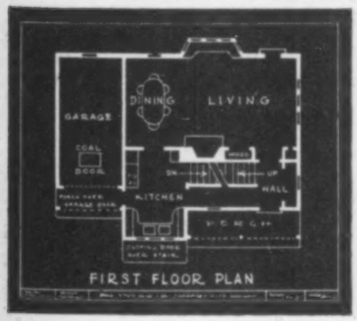
BUILD LIVABLE BASEMENTS

under those ***NEW HOMES!***


PORT IN GARAGE FLOOR FOR COAL
WORM TO FEED FURNACE
COAL


GAME ROOM
BAR
COAL BIN
WORM
HEATING PLANT
HOT WATER
UP
OUTSIDE STAIR FOR ASH REMOVAL

BASEMENT FLOOR PLAN


GARAGE
COAL DOOR
DINING
LIVING
KITCHEN
DN
UP
HALL
PORCH

FIRST FLOOR PLAN

.. with modern ***COAL-BURNING*** *heating plants for economy...*

Here's a nice little house with a great big game room . . . the kind of home our veterans are looking for . . . and it can be built at a price they can afford.

COST and LIVABILITY are always major factors in home selection. You can help serve these interests by designing homes with modern coal heating plants. Whether designed with fully automatic heating equipment like the house above, or, less expensively, with a hand-fired coal furnace equipped with automatic controls, coal heating is the most economical in the long run.

A coal heating plant is the only installation that can be converted to all other types of heating. This is important in determining a home's market value, sales appeal an owner satisfaction. We have a three thousand year coal reserve. Other fuels may soon be exhausted. When you design or build, play safe, provide coal storage space and chimneys adequate to handle any fuel.

Build livable basements under those new homes . . . with modern coalburning heating plants. Coal heat is economical, clean, quiet, odorless and abundant.

Basement floor plan above shows playroom with refreshment bar as an added feature. Novel first floor plan shows kitchen at front so housewife can "see what's going on outside" while she works. Combination living and dining room is at the rear—away from the street—for quietness and privacy.

Norfolk and Western
RAILWAY
CARRIER OF FUEL SATISFACTION

BUILDING VOLUME IN NEW STRIDE

Building construction in 1946 has hit a phenomenal stride, establishing in the first six months a record dollar volume of $3,937,736,000 in contracts awarded — greater by half a billion dollars than the first six months of 1928, the previous peak year.

No longer under controls as rigid as during wartime, this great construction activity is seen not only in housing but in *every* building type. Figures released by the F. W. Dodge Corporation, covering the 37 states east of the Rockies for the six months ending July 1, reveal large increases in dollars being invested and in numbers of projects on which contracts have been awarded. The following comparisons are for the first half-year of 1945 and 1946.

Commercial Buildings

In 1946 there are 16,652 projects, compared to 4,896 in 1945: 340 per cent of 1945. Their valuation is $478,200,000: 718 per cent of 1945. *Double* the dollars, on the average, are going into each commercial project this year.

Manufacturing Buildings

Despite terrific plant expansion during the war years, 1946 projects number 8,408 against 6,416 last year: 131 per cent of 1945. And dollar valuation is up, too: 140 per cent of 1945.

Educational and Science

The number of projects almost exactly matches the 1945 figure (944 and 943). Most interesting feature: the average amount being invested in each individual building project; the '46 average is $118,177, while in 1945 it was $34,447. Total valuation is 343 per cent of 1945.

Hospital, Institutional

Number of projects in 1946 is only 27 per cent of last year, valuation only 85 per cent, but here are two important considerations: (1) more dollars are going into the average project this year — average valuations run $103,406 for 1946, compared to only $32,518 for 1945 — three times greater; (2) a vast potential is found in the tremendous number of hospital and institutional units which have not yet reached the contract stage — the RECORD's emphasis on hospitals in June, July and August issues was based on a recent one month study made by Dodge showing 266 projects valued at $118,494,000 in the contemplated and planning stage or, in one month, more than twice the dollar valuation of the entire six-month period.

Public Buildings

Reflections are similar to trends in hospitals and institutional buildings: 1946 projects numbered only 63 per cent of 1945, but the total dollar valuation of these projects is 308 per cent of 1945.

Religious Buildings

In 1946 there are 923 projects, compared to 540 in 1945: 171 per cent of 1945. Average project valuation soared from $16,091 in 1945 to $40,260 this year; total valuation, 428 per cent of 1945.

Social, Recreational

Both numerically and dollar-wise, social and recreational buildings show a marked increase over last year: they are 164 per cent of 1945 numerically; 267 per cent of the 1945 dollar valuation.

Hotels, Apartment Hotels

Hotel building contracts awarded in 1946 were 187 per cent of 1945: 306 projects compared to 164 projects. The average dollar valuation per project jumped from $20,427 last year to $104,647 — over five times as great. Total valuation is 956 per cent of 1945.

Dormitories

The average valuation of dormitory projects has multiplied four times, increasing from $40,859 in 1945 to $164,223 this year; total valuation is 653 per cent of 1945. Most recent figures showing dormitories in the contemplated and planning stages — tabulated for one month only — place valuation at $12,262,000: almost twice that of the entire six-month 1945 period.

Apartment Buildings

Contracts awarded for apartment construction in 1946 ran 179 per cent of '45 in number of projects and 457 per cent in valuation. Average project valuation almost tripled.

One-Family Dwellings

Owner-occupancy dwellings showed a great increase, rising from 6,309 projects in 1945 to 25,420 in 1946; valuation, 718 per cent of 1945. In one recent month, Dodge reports of projects in the contemplated and planning stages showed that projects being developed were half the '45 total, numerically, and exceeded in dollar valuation the entire six-month 1945 total.

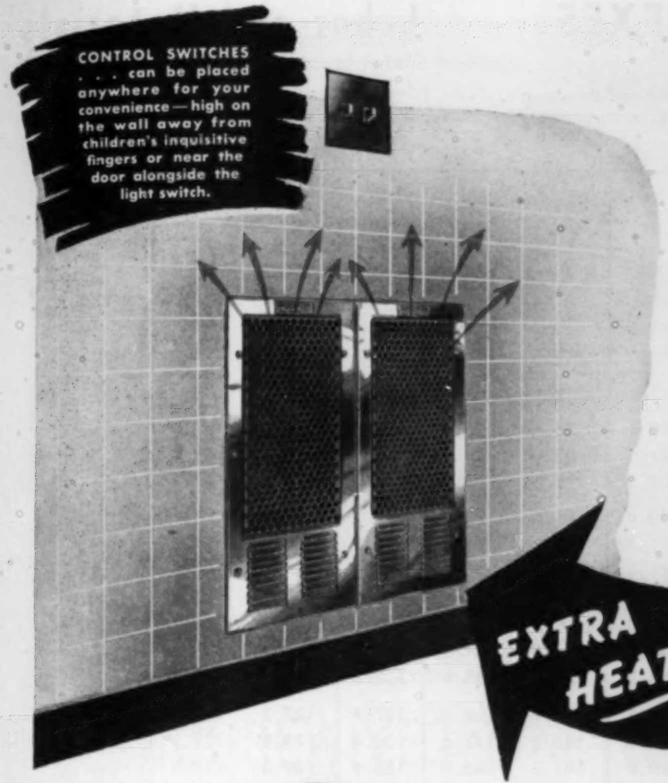
CONSTRUCTION CONTRACTS AWARDED

(New Buildings and major alterations combined)

F. W. Dodge Figures for First Six Months 1945 & 1946 *

TYPE BUILDING	NUMBER OF PROJECTS			DOLLAR VALUATION OF PROJECTS		
	½ year 1945	½ year 1946	% of 1945	½ year 1945	½ year 1946	% of 1945
				NON-RESIDENTIAL		
Commercial	4,896	16,652	340%	$66,574,000	$478,200,000	718%
Manufacturing	6,416	8,408	131%	515,806,000	721,096,000	140%
Educational & Science	943	944	100%	32,484,000	111,559,000	343%
Hospital & Institutional	1,985	534	27%	64,548,000	55,219,000	85%
Public	468	294	63%	4,068,000	12,512,000	308%
Religious	540	923	171%	8,689,000	37,160,000	428%
Social & Recreational	753	1,237	164%	22,446,000	59,904,000	267%
				RESIDENTIAL		
Hotels & Apt. Hotels	164	306	187%	$3,350,000	$32,022,000	956%
Dormitories	163	265	163%	6,660,000	43,519,000	653%
Apartment	1,836	3,285	179%	29,207,000	133,503,000	457%
1-Family Dwellings (owner-occupancy)	6,309	25,420	403%	28,463,000	204,399,000	718%

* 37 eastern states.


CONTROL SWITCHES . . . can be placed anywhere for your convenience—high on the wall away from children's inquisitive fingers or near the door alongside the light switch.

A good Combination!

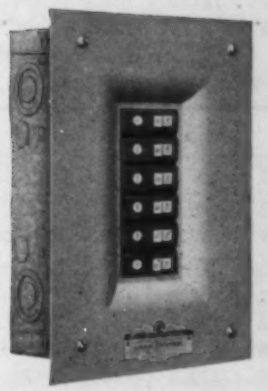
EXTRA HEAT and GREATER ELECTRICAL CAPACITY!

ELECTRIC QUIKHETER

Here are two comfort giving "extras" that should appeal to every homeowner—*extra heat* for cool chilly mornings and evenings when regular heating equipment is off... and *adequate electrical capacity* to assure the fullest measure of energy for today's and tomorrow's home service requirements.

The new and improved Built-in FA Quikheter is specifically designed to meet the need for auxiliary heat in homes. Equipped with a genuine Nichrome element that should never wear out, this attractive easy-to-install unit will send forth a glow of warm air that will change the room temperature in three to five minutes, thus effecting savings in time and fuel.

The FA Type AC Circuit Breaker Load Center and Service Equipment is another big "EXTRA" that will add immeasurably to the convenience, comfort and efficiency of homes. Shock-proof and simple to operate, requiring only the flip of a handle, these units not only make it possible to provide all the electrical capacity needed for household appliances, but provide double protection against dangerous short circuits and sustained overloads.



TYPE AC LOAD CENTER

For maximum home comfort and convenience, specify this new FA *EXTRA* heat and electrical capacity combination.

Capacities: Built-in FA Quikheters are available in single units of 1000 and 1500 watts and twin units of 2000 and 3000 watts. FA Load Centers, 2 to 16 poles, 15 to 50 amperes, for 120 volt AC Service.

IF IT'S FA IT'S "OK"

MAKERS OF . . .
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Frank Adam
ELECTRIC COMPANY
St. Louis, Missouri

SERVICE EQUIPMENT
SAFETY SWITCHES
LOAD CENTERS
ELECTRIC QUIKHETER

CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926 — 1929 = 100

Compiled by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corporation, from data collected by E. H. Boeckh & Associates, Inc

	NEW YORK					ATLANTA				
	Residential		*Apts., Hotels, Office Bldgs.*	*Commercial and Factory Buildings*		*Residential*		*Apts., Hotels, Office Bldgs.*	*Commercial and Factory Buildings*	
Period	*Brick*	*Frame*	*Brick and Concr.*	*Brick and Concr.*	*Brick and Steel*	*Brick*	*Frame*	*Brick and Concr.*	*Brick and Concr.*	*Brick and Steel*
1920	136.1	136.9	123.3	123.6	122.6	122.8	122.9	108.6	109.8	105.7
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1941	134.5	135.1	135.1	137.2	134.5	97.5	96.1	99.9	101.4	100.8
1942	139.1	140.7	137.9	139.3	137.1	102.8	102.5	104.4	104.9	105.1
1943	142.5	144.5	140.2	141.7	139.0	109.2	109.8	108.5	108.1	108.7
1944	153.1	154.3	149.6	152.6	149.6	123.2	124.5	117.3	117.2	118.2
1945	160.5	161.7	156.3	158.0	155.4	132.1	133.9	123.2	122.8	123.3
Jan. 1946	173.1	173.7	169.8	170.4	167.0	137.9	138.4	127.4	127.3	127.0
Feb. 1946	173.1	173.7	169.8	170.4	167.0	140.8	142.6	130.4	128.9	128.9
Mar. 1946	174.9	175.6	172.1	172.9	169.0	141.2	143.0	133.6	129.3	129.3
Apr. 1946	175.5	176.2	172.9	173.5	169.6	141.2	143.0	131.3	129.5	130.1
May 1946	180.3	180.6	177.4	179.3	174.7	144.7	147.2	133.2	131.0	131.3
June 1946	180.7	181.0	177.9	179.7	175.1	144.9	147.4	133.5	131.2	131.5
July 1946	181.3	181.6	178.6	180.3	175.6	148.6	150.2	138.6	137.0	135.5
	% increase over 1939					*% increase over 1939*				
July 1946	**46.9**	**48.1**	**36.6**	**35.1**	**34.8**	**71.0**	**80.9**	**45.7**	**40.7**	**43.0**
	ST. LOUIS					SAN FRANCISCO				
1920	118.1	121.1	112.1	110.7	113.1	108.8	107.5	115.2	115.1	122.1
1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1941	118.8	118.0	121.2	121.7	122.2	116.3	112.9	120.5	123.4	124.3
1942	124.5	123.3	126.9	128.6	126.9	123.6	120.1	127.5	129.3	130.8
1943	128.2	126.4	131.2	133.3	130.3	131.3	127.7	133.2	136.6	136.3
1944	138.4	138.4	135.7	136.7	136.6	139.4	137.1	139.4	142.0	142.4
1945	152.8	152.3	146.2	148.5	145.6	146.2	144.3	144.5	146.8	147.9
Jan. 1946	157.7	158.3	150.8	152.6	149.5	148.6	146.4	146.7	148.3	149.3
Feb. 1946	157.7	158.3	150.8	152.6	149.5	150.6	147.7	149.2	151.1	150.3
Mar. 1946	158.8	159.5	151.1	152.8	149.9	154.0	153.0	151.8	151.8	152.3
Apr. 1946	159.5	159.8	152.7	155.0	152.1	155.3	153.7	153.8	154.6	154.5
May 1946	162.2	163.0	154.3	155.8	153.1	157.6	156.1	155.7	156.5	156.2
June 1946	165.8	165.0	159.9	163.8	159.5	158.0	156.5	156.2	156.9	156.6
July 1946	167.8	167.7	161.9	164.8	160.8	159.0	157.5	158.7	158.7	160.1
	% increase over 1939					*% increase over 1939*				
July 1946	**52.1**	**56.6**	**36.3**	**37.5**	**35.0**	**50.6**	**58.7**	**35.0**	**30.1**	**37.5**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110\text{–}95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110\text{–}95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published legal prices, thus, indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

HOUSEWIVES LIKE IT

Stainless steel work surfaces are easy to clean

The gleaming surfaces in this attractive home kitchen are stainless steel. They are easily wiped clean because the stainless steel is not affected by the acids in food, and it will not rust. In addition, the metal does not easily dent or scratch.

Widespread use of stainless steel for work surfaces and for decorative trim in home kitchens, as well as in larger kitchens of restaurants, hotels, and hospitals, has demonstrated that stainless steel equipment not only is pleasing to the eye . . . but it is also exceedingly serviceable.

To keep informed of the newest applications of stainless steel, ask to receive our monthly publication ELECTROMET REVIEW. For information on the production, properties, or fabrication of stainless and other alloy steels, write our Technical Service Department. Although we do not make steel, we do produce the alloys used in its manufacture, and our engineers have accumulated a great deal of information about the use of stainless steel in many industries.

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In Canada: Electro Metallurgical Company
of Canada, Limited, Welland, Ontario

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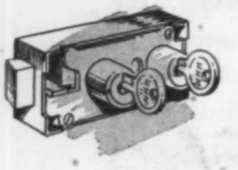
BEST COMBINATION OF THESE QUALITIES

STAINLESS STEEL
SAFE DEPOSIT BOXES
They'll be as bright and safe in the year 2000 as they are today!



The new changeable-key lock. Write for descriptive circular.

No more grime or dirt to soil her costly garments. *Stainless Steel* is clean!

No grease, no smear to ruin his gloves and disposition. *Stainless Steel Safe-Deposit Boxes* are prestige vault equipment.

No endless work or worry to keep the vault spic and span. A swish of the dust rag reveals the original luster of the *stainless steel.*

Again, Herring-Hall-Marvin engineers are a decade ahead of the competitive parade—this time with STAINLESS STEEL SAFE DEPOSIT BOXES, featuring also the new H-H-M No. H-610-CC Instantly Changeable Sealed-Key Safety Deposit Box Lock.

This new combination of stainless steel boxes combined with the changeable-key lock obsoletes every previous conception of safe-deposit vault beauty, customer convenience, bank protection, and fast service! Nothing like it has ever been available before. Consult your nearest H-H-M agent —or write us direct.

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Manufacturers of Bank Vault Equipment - Bank Counters - Tellers' Buses and Lockers - Safe Deposit Boxes - Night Depositories - Bank and Office Safes

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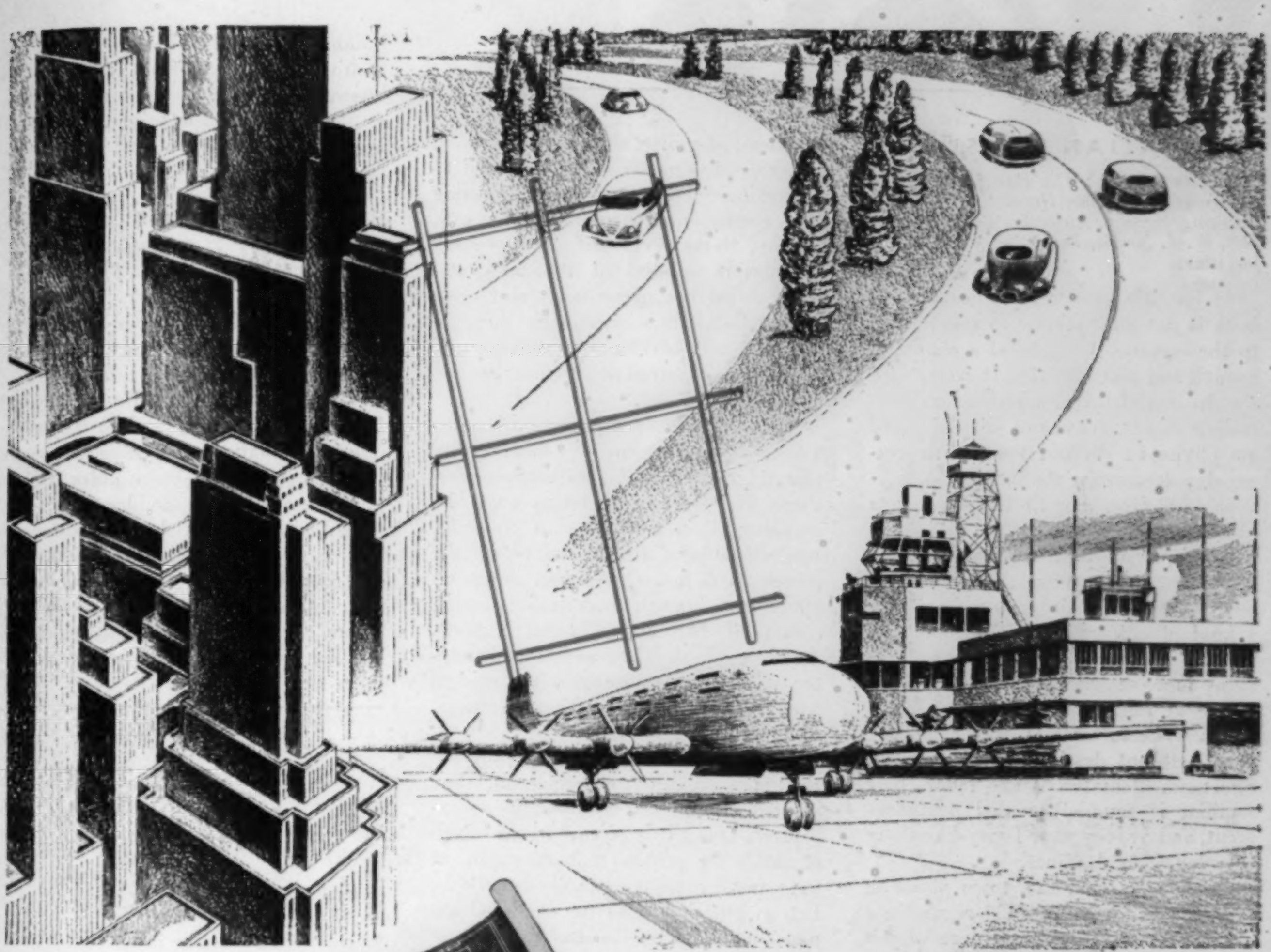

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with this Proven Fabric

At our busiest airports, on our best paved streets and highways, in our tallest buildings, you can see how concrete construction contributes to modern living.

Welded Wire Fabric, the most vital factor in concrete construction, is invisible in the concrete slab, but imparts the strength and stamina to control cracks that may form in concrete.

American Welded Wire Fabric is the most widely used prefabricated concrete reinforcement. Its closely spaced steel wires are electrically welded into a prefabricated mat which fortifies against major stresses and strains.

Many additional uses of concrete will be made possible by the ability of this versatile reinforcement to meet new requirements. So when you are planning for tomorrow, it will pay you to know *all* of the ways you can use American Welded Wire Fabric. For wherever it is practical, it is also economical.

AMERICAN STEEL & WIRE COMPANY
USS
AMERICAN WELDED WIRE FABRIC
UNITED STATES STEEL

American Steel & Wire Company
Cleveland, Chicago and New York
Columbia Steel Company, San Francisco,
Pacific Coast Distributors
Tennessee Coal, Iron & Railroad Company, Birmingham
Southern Distributors
United States Steel Export Company, New York

UNITED STATES STEEL

REQUIRED READING

AUSTRALIAN HOUSING

Homes in the Sun: The Past, Present and Future of Australian Housing. By Walter Bunning. Sydney, Australia (124 Liverpool St.), W. J. Nesbit, 1945. 7½ by 10 in. 100 pp. illus.

As its title so clearly indicates, this book is not antipathetic to romance — to the romance, that is, of a country's growth and potentialities. It starts with the dreams of the first settlers on Australian shores, dreams of fair cities and good living for all. And it ends with present-day dreams for the future.

In 1788 Governor Phillip drew up a plan for Sydney which provided main thoroughfares 200 ft. wide, and building blocks not less than 60 ft. in width, with one building on each block to "preserve a kind of uniformity in the buildings, prevent narrow streets, and to exclude many inconveniences which a rapid increase of inhabitants might otherwise occasion hereafter." It was a worthy plan, but not destined to be fulfilled. Shortages of materials and labor (how familiar it sounds!) caused postponement, and Sydney grew Topsy-like along crowded, irregular lines.

Outside Sydney, too, town planning was started early. In 1829 regulations were laid down fixing the width and depth of all blocks of land and the width of the streets, and requiring cross streets to be at right angles to main streets. Furthermore, it was required that "in order to preserve uniformity the door sill of each building shall be one foot above the level of the Crown of the street . . ." and that "no person shall be permitted to build at a greater or less distance from the footpath than 14 feet, which space to be appropriated to an open verandah or such plantations as may be desired." The plan drawn by Col. William Light for Adelaide in 1837 provided a green belt of parkland entirely around the town, and a gridiron system of parallel roads. Melbourne, too, was planned in 1837, by Robert Hoddle, with a green belt surrounding the town; and actually laid out that way; unfortunately, suburbs since have sprawled over it.

As for the houses, there gradually evolved what Mr. Bunning terms Australia's "first real architecture" — "sensible homes surrounded by trees with verandahs to shade the walls and provide space for social living. The verandah in the country takes the place of the living room in urban houses. The bedrooms, living-dining rooms and kitchen are usually entered from the verandah. This provides a cool arrangement because the breeze can pass right through the house; there are no passageways and halls to obstruct it."

Despite the efforts of the early town planners, of course, the promise of good living conditions for everyone failed to materialize. The reason, Mr. Bunning says, can be summed up in the one word, *poverty*. Slums developed, profit-seeking speculators subdivided the land and gobbled up the green belts and open spaces. Today there is a shortage throughout Australia of 196,500 dwellings and a third of Australian families are inadequately housed.

What will tomorrow bring to this wide-awake land "down under"? Community planning seems to be no catch phrase there. To help speed it on its way, Mr. Bunning offers a number of plans for single dwellings, a brief chapter on the principles of house planning, others on apartment houses, community needs, community planning and town planning. And to top it all off, he adds a final chapter on regional planning, with maps of Australia showing population, resources, topography, climate, etc.

"The city is an outward expression of the life of the time," he concludes. "The present chaotic development is no exception. It is a true picture of the selfish scramble for private monetary gain at the expense of the community as a whole. Let us put a stop to the muddled expansion of our towns and reconstruct the centers so that we can again live in them and glory in them. It is for the community to patch up the errors of the past."

BUILDERS OF BOSTON

Boston After Bulfinch: An Account of Its Architecture, 1800–1900. By Walter H. Kilham. Cambridge 38, Mass., Harvard University Press, 1946. 6 by 9 in. xvi + 114 pp. illus. $3.50.

Architects really seem to be coming into their own at last in print. This is the third volume to appear within the past few months dealing primarily with the early architects of this country. It is a much shorter account than either Beatrice St. Julien Ravenel's *Architects of Charleston* or Thomas Tileston Waterman's *The Mansions of Virginia*, but its brevity is no deterrent. It is a highly readable report on the architectural growth of Boston in the 19th Century, enlivened with bits of history and local color, and replete with brief sketches of the leading architects of the period — Charles Bulfinch, Asher Benjamin, Peter Banner, Samuel McIntire, Alexander Parris, Solomon Willard, Richard Upjohn, Edward C. Cabot, William Robert Ware, Henry Hobson Richardson, and others.

Mr. Kilham, himself an architect, does much more than chronicle past history, however. He describes the successive architectural styles, the effects of new building materials, the importation of architectural ideas from abroad. He knows Boston architecture and history — and he knows Bostonians. The result is a compact study of one phase of a city's development.

HOUSES TO SUIT

Home Planners' Guide. Hartford, Conn., The Hartford Times, 1946. 8½ by 11 in. 168 pp. illus.

Prospective home owners will enjoy poring over this collection of house plans by such architects as A. Raymond Ellis, Herbert Gibson, Keith Sellers Heine and Raymond J. Percival. The houses range in size from small two-bedroom, one-story cottages to large 10-room units, and in style from the Cape Codder to the flat-roofed modern. Articles provide basic information on mortgages, design, construction loans, the need for an architect, lighting, heating, etc. One section is devoted to interior decoration, one to kitchen and bathroom planning.

Technical Books

ENGINEERING DATA

Data Book for Civil Engineers: Vol. II, Specifications and Costs. By Elwyn E. Seelye. New York 16 (440 Fourth Ave.), John Wiley & Sons, Inc., 1946. 9⅜ by 11¾ in. 326 pp. $6.75.

This second volume in a series of three "Data Books" covers contract documents, structural specifications, and costs. With Volume I, Design, published late last year, and Volume III, Field Practice, soon to appear, the series will offer the practicing civil engineer a whole library of the special information he needs.

The current volume presents structural specifications for site preparation, borings, excavation and grading, piling, foundations, masonry, stone masonry, structural concrete, structural steel, fireproofing, steel joists, waterproofing, wooden buildings, wood preservation and painting. In addition there is a table of suggested grades and species for timber specification. Also included are suggestions for specifying paints.

Separate sections of the book deal with airports, roads and railroads, bridges, docks, dams, drainage, sewers, sewage treatment and water. A special feature is the exhaustive glossary, which runs to 72 pages.

TEMPERATURE CONTROL

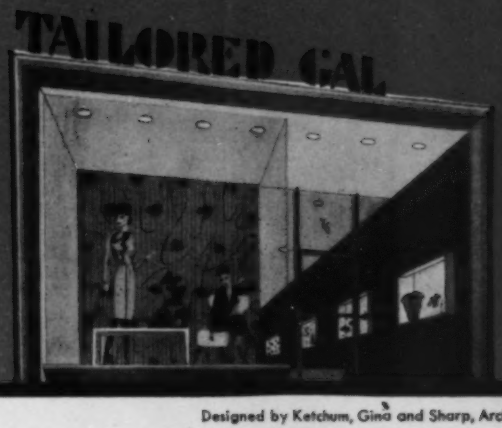
Heating and Ventilating for Architects and Builders. By R. K. Cornell, A.M.I.H.V.E. London, E.C.1 (37–38 Hatton Garden), Paul Elek Publishers Ltd., 1946. 7½ by 10 in. 56 pp. illus. 7s. 6d.

From England comes this slim little volume of highly useful information. Written in layman's language, and pre-

(*Continued on page 28*)

new

Interchangeable Members With Multiple Uses



Designed by Ketchum, Gina and Sharp, Architects, New York City

You can create an endless variety of custom-styled store front designs with the K-47 Line of store front metals, because its members are interchangeable and they also serve multiple uses.

A typical example of K-47 interchangeability is illustrated in the upper panel at the left. It shows a few of the many face members which are used with this same gutter assembly. And an illustration of the multiple uses of a K-47 member is shown in the lower panel.

These two outstanding features enable you to obtain unparalleled flexibility and freedom in designing a limitless number of distinctive store fronts.

They also reduce drafting expenses, since you can use the elements of a good design more than once and obtain new effects with K-47 interchangeable members. The use of a standard assembly for each type of construction simplifies installation and minimizes the costs of job supervision.

For details of the striking new K-47 Line and the Kawneer Standard Line, fill out and mail the coupon below.

Kawneer
STORE-FRONTS

THE KAWNEER COMPANY, 717 North Front Street, Niles, Michigan

Check portfolio you desire. Both will be sent if checked.

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Name________________ Firm________

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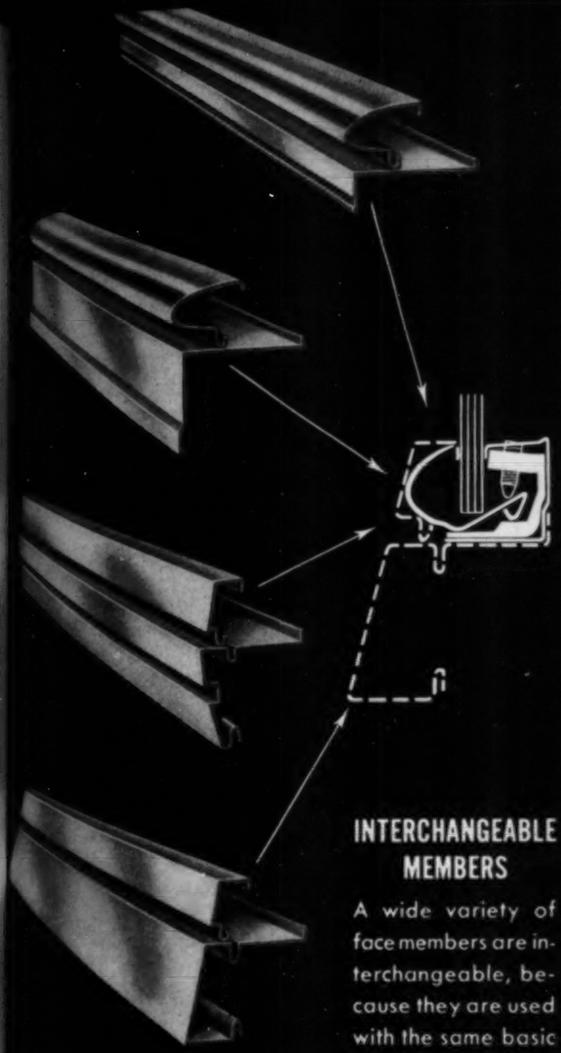
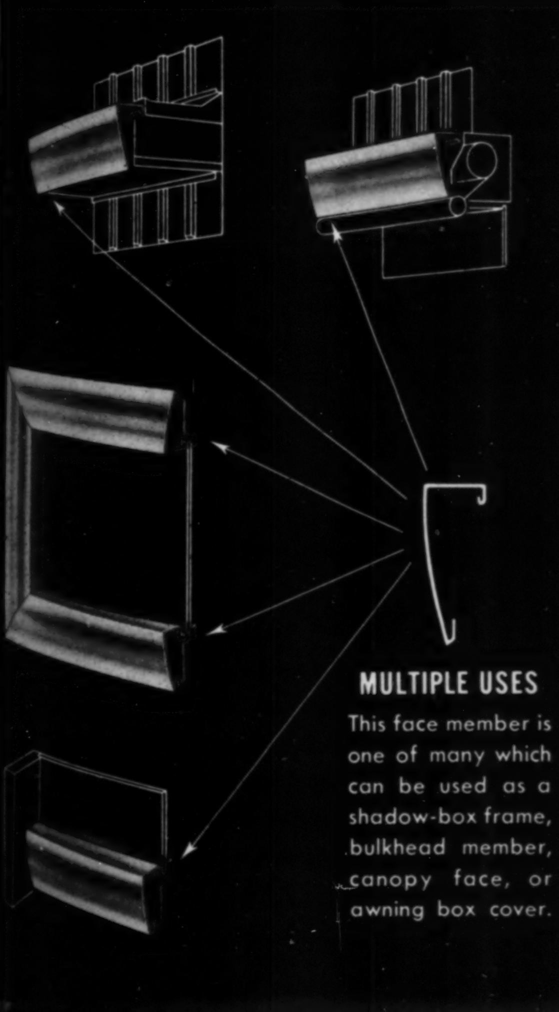


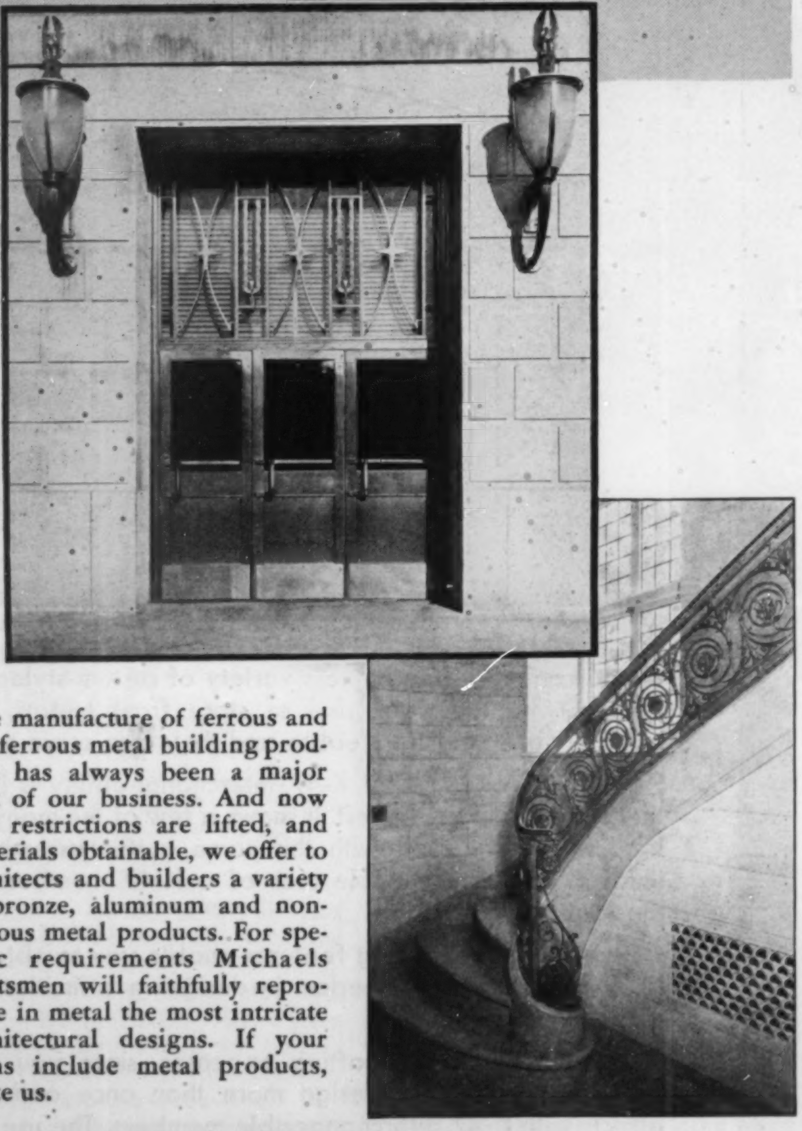
INTERCHANGEABLE MEMBERS

A wide variety of face members are interchangeable, because they are used with the same basic gutter assembly.



MULTIPLE USES

This face member is one of many which can be used as a shadow-box frame, bulkhead member, canopy face, or awning box cover.



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Name Plates
Railings (cast and wrought)
Building Directories
Bulletin Boards
Stamped and Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
Wrought Iron and Bronze Lighting Fixtures
Wire Work
Cast Thresholds
Extruded Thresholds
Extruded Casements and Store Front Sash
Bronze and Iron Store Fronts
Bronze Double Hung Windows
Bronze Casement Windows

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Manufacturers since 1870 of many products in Bronze, Aluminum and other metals

REQUIRED READING

(Continued from page 26)

supposing no technical knowledge whatever, it explains the basic theory of heating and ventilating, the various systems in common usage and how they work. Of particular interest are the many tables and the section on comparative costs. The tables include transmission coefficients, temperature and air change requirements for homes, institutions, offices and schools, fuel consumption and running costs of the various kinds of heating systems. A final chapter deals briefly with ventilation and air conditioning, describing the several types of systems in common use. Diagrams are numerous.

GEOMETRICAL LIVING

The Geometry of Art and Life. By Matila Ghyka. New York (63 Fifth Ave.), Sheed & Ward, 1946. 6 by 9 in. xviii + 174 pp. illus. $4.00.

Here is a learned and highly technical volume on symmetry or proportion. It is not the sort of thing one picks up and reads through casually, but an architect or engineer blessed with a mathematically alert mind should find considerable enjoyment and profit in a study of it.

The author, visiting professor of esthetics at the University of Southern California, has traced the transmission of regulating diagrams and canons of proportion from antiquity to the present. He shows, with diagrams, how "as early as Egyptian times the plans of the important monuments of every great period or style of architecture were executed according to a very subtle and rational 'dynamic symmetry'. . . ." And he concludes that "in all great periods of Western Art the knowledge and use of Symmetry in its antique meaning have been the mainspring of 'symphonic' composition. . . ."

New Editions

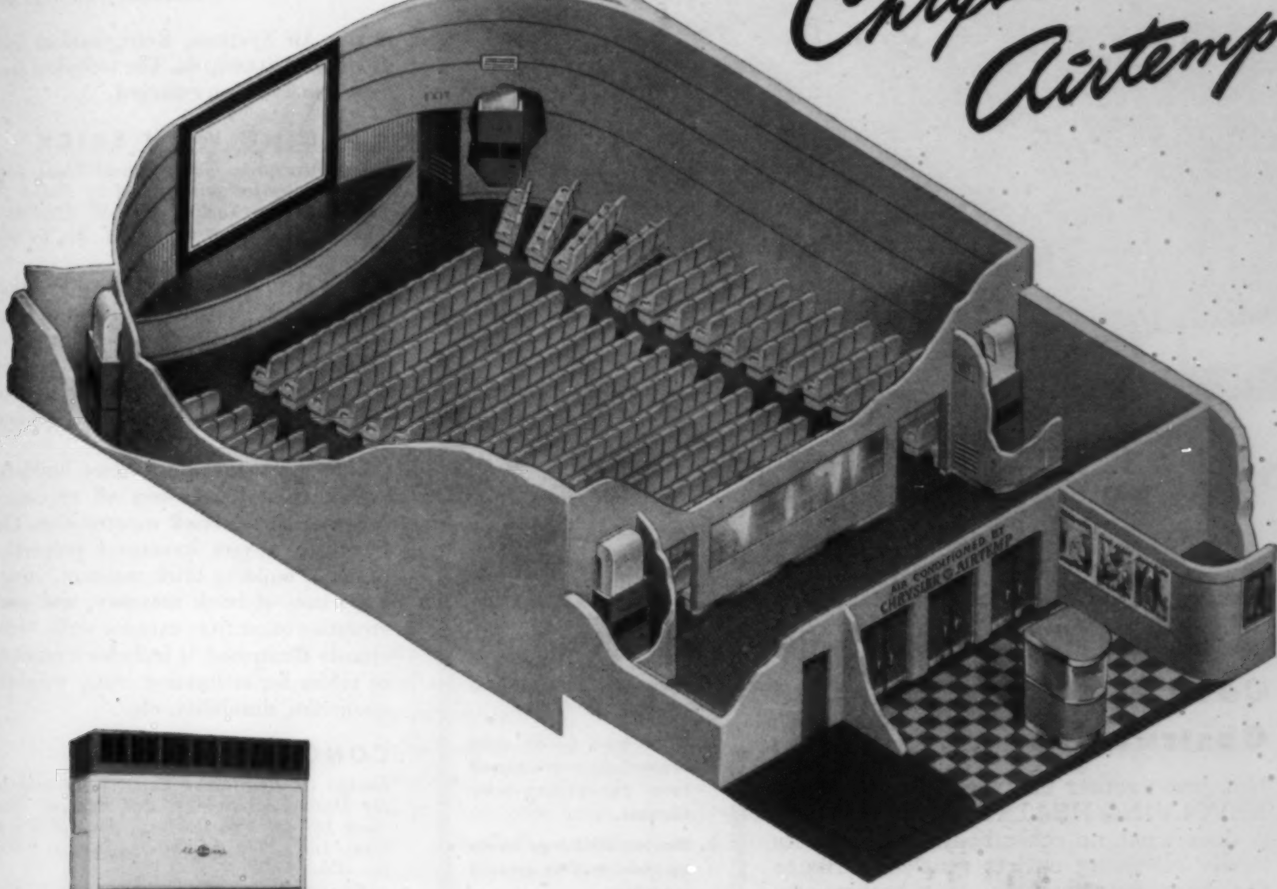
HEATING GUIDE

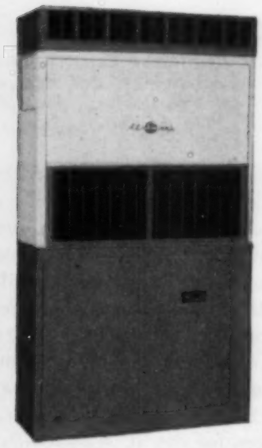
Heating, Ventilating, Air Conditioning Guide: 1946 Edition. New York (51 Madison Ave.), American Society of Heating and Ventilating Engineers, 1946. 6 x 9 in. xxiv + 1,373 pp. $6.00.

This 24th edition of the "Guide," like its annual predecessors, provides the latest available data for use of the practicing engineer, compiled from authoritative sources and reflecting progress of engineering in this field. All chapters have been revised to conform with current engineering practice. Principal changes or amplification occur in the following: Fluid Flow, Air Contaminants, Physiological Principles, Cooling Load, Dehumidification by Sorbent Materials, Heating Boilers and Furnaces,

(Continued on page 30)

Chrysler Airtemp





"Packaged" Air Conditioner

A simplified form of easy-to-install air conditioning for every kind of business. Heating coil can be added right in the package for Winter air conditioning.

Simplified Cooling for Small Theaters

A Number One Box Office Attraction for small theaters can be planned right on the architect's drawing board. It's Chrysler Airtemp "Packaged" Air Conditioners.

Architects will find this simplified form of automatic air conditioning so compact and flexible that it will fit perfectly into even the most unusual plans. And theater owners will find that Chrysler Airtemp "Packaged" Air Conditioners quickly pay their way by increasing summer audiences.

Backed by Chrysler Corporation, these "Packages" of cool comfort are reasonable in price and give trouble-free operation at an amazingly low cost. All are equipped with the famous Chrysler Airtemp Sealed Radial Compressor for economical operation, long life and finer performance.

For specifications, architects are invited to write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio; in Canada—Therm-O-Rite Products, Ltd., Toronto, Ont.

CHRYSLER AIRTEMP

HEATING • COOLING • REFRIGERATION

Curtiss-Wright Assembly Plant, Robertson, Mo. *Albert Kahn Associated Engineers and Architects, Inc.*

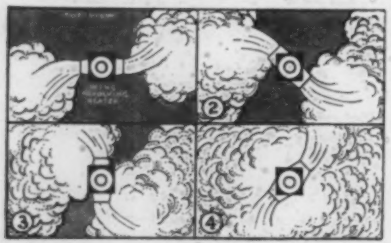
ADVANTAGES OF WING REVOLVING UNIT HEATERS

1. **Makes workers feel comfortable, live and invigorated—more productive.**
2. **Reaches over and around obstructions and into out-of-the-way corners.**
3. **Moving discharge heats up plant quickly on cold mornings.**
4. **Reduces absenteeism due to colds resulting from drafts, chills or overheating.**
5. **Is an excellent cooling system in summer with steam off and fans on.**

Revolving Unit Heaters Insure Complete, Thorough Coverage Regardless of Obstructions [in industrial plants as in airplane hangars]

Not just another unit heater, the WING REVOLVING HEATER is unique in that it does what no other heater can do—its slowly revolving outlets gently distribute the heat continuously in a constantly changing direction. It reaches over, around and under obstructions into out-of-the-way corners, its moving streams of heated air quickly warm up a plant in the morning.

Revolving Discharge Outlets for Thorough Heat Coverage



1. Heater starts. 2. 15 seconds later, 45° revolution. 3. 30 seconds later, 90%. 4. 45 seconds later, 135° revolution.

Wing Revolving Unit Heaters keep the heated air moving, circulating around obstacles, seeking out far corners, spreading an even, uniform, healthfully invigorating blanket of warm air over the entire working area.

Its properly warmed, healthful air currents thoroughly distributed, create a sensation of live, invigorating comfort for the workers. Wing Revolving Unit Heaters are used in many of the country's leading industrial plants. Write for a list of installations.

L. J. Wing Mfg. Co.

151 West 14th Street
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Factories at Newark, N. J.
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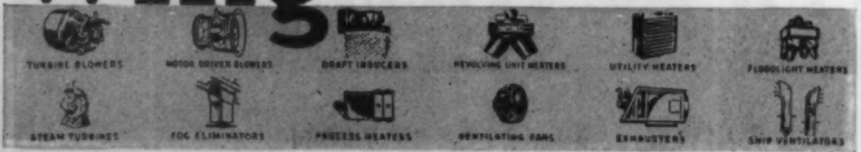
Wing REVOLVING UNIT HEATERS



REQUIRED READING

(*Continued from page 28*)

Warm Air Systems, Refrigeration, and Codes and Standards. The technical section also has been enlarged.

BUILDING WITH BRICK

Brick Structures: How to Build Them. 11th Edition. Revised and Edited by Ralph P. Stoddard. New York 18 (330 W. 42nd St.), McGraw-Hill Book Co., 1946. 5¼ by 8½ in. x + 170 pp. illus. $2.00.

This is the first "permanent" edition of "Brick — How to Build and Estimate," a handbook originally written by William Carver and published in 1920 by The Brick Manufacturers Association of America. It has been completely revised and modernized.

Intended to give contractors, builders, architects and engineers all necessary information for brick construction, the handbook covers structural properties of brick, building brick masonry, structural uses of brick masonry, and construction other than exterior walls. Generously illustrated, it includes a number of tables for estimating costs, weights, quantities, durability, etc.

CONCRETE DESIGN

Design of Reinforced Concrete Structures. By Dean Peabody, Jr. 2nd Edition. New York 16 (440 Fourth Ave.), John Wiley & Sons, Inc., 1946. 5½ by 8¼ in. xii + 532 pp. illus. $5.50.

This new edition of Professor Peabody's textbook has been completely revised and brought up to date to conform with the most recent codes and recommended practices. New material includes the plastic theory of design and the design of forms. Several sections have been rewritten and expanded, including the material on shrinkage and plastic flow and the chapter on elastic frame analysis.

Written for use at Massachusetts Institute of Technology, this text is clear-cut and thorough. Diagrams are numerous. An appendix furnishes building code regulations, tables and graphs.

ELECTRICAL EQUIPMENT

List of Inspected Electrical Equipment: May, 1946. New York 13 (161 Sixth Ave.), Underwriters' Laboratories, Inc., 1946. 5¾ by 8½ in. 448 pp.

Including all listings up to May 1, 1946, and replacing all earlier lists, this latest Underwriters' Laboratories volume is as usual carefully classified and indexed. It contains summaries of reports on electrical equipment which has been examined with reference to fire and accident hazards and for conformity with the provisions of the National Electrical Code. At the head of each classification is general information on the method of listing in that group, and, where necessary, certain general information on requirements, suitability, safety requirements, installation, etc.

ARCHITECTURAL

RECORD

BUILDING A MARKET FOR DESIGN

IT MAY seem strange even to consider such a topic when the demand for design services are at an all time peak, when architectural and engineering offices are so busy they can find neither the time nor the trained personnel to execute the commissions that are offered, when the professions as well as all other business are in a "sellers' market." Yet this is precisely the time when a re-examination of methods of organization, of production, of promotion and merchandising is most necessary to insure the professions' increasing share in both the present and future markets. It will be much too late when there is a buyers' market.

With so much design work clamoring to be done, all sorts of organizations are expanding to handle it, and such organizations constitute the future competition of the professional firms in private practice. A list of such competitors of the profession would include the so-called industrial designer, the "complete production" firms (which offer all design, construction and equipment services, delivering a building complete), the contracting firm, with "our own designer and architectural department," the plan-book or ready-made blueprint sellers, the corporations with their own design-and-construction departments, and the government architectural and building bureaus, local, state or national.

Of course the profession must expect competition; there is nothing new in this. In fact, if my memory serves me aright, it was just this sort of competitive situation that brought about the formation of the American Institute of Architects. It was the desire of the founding group to be "of ever-increasing service to society" by establishing a firm business and ethical basis for carrying on their design work, both in their own and the public interest.

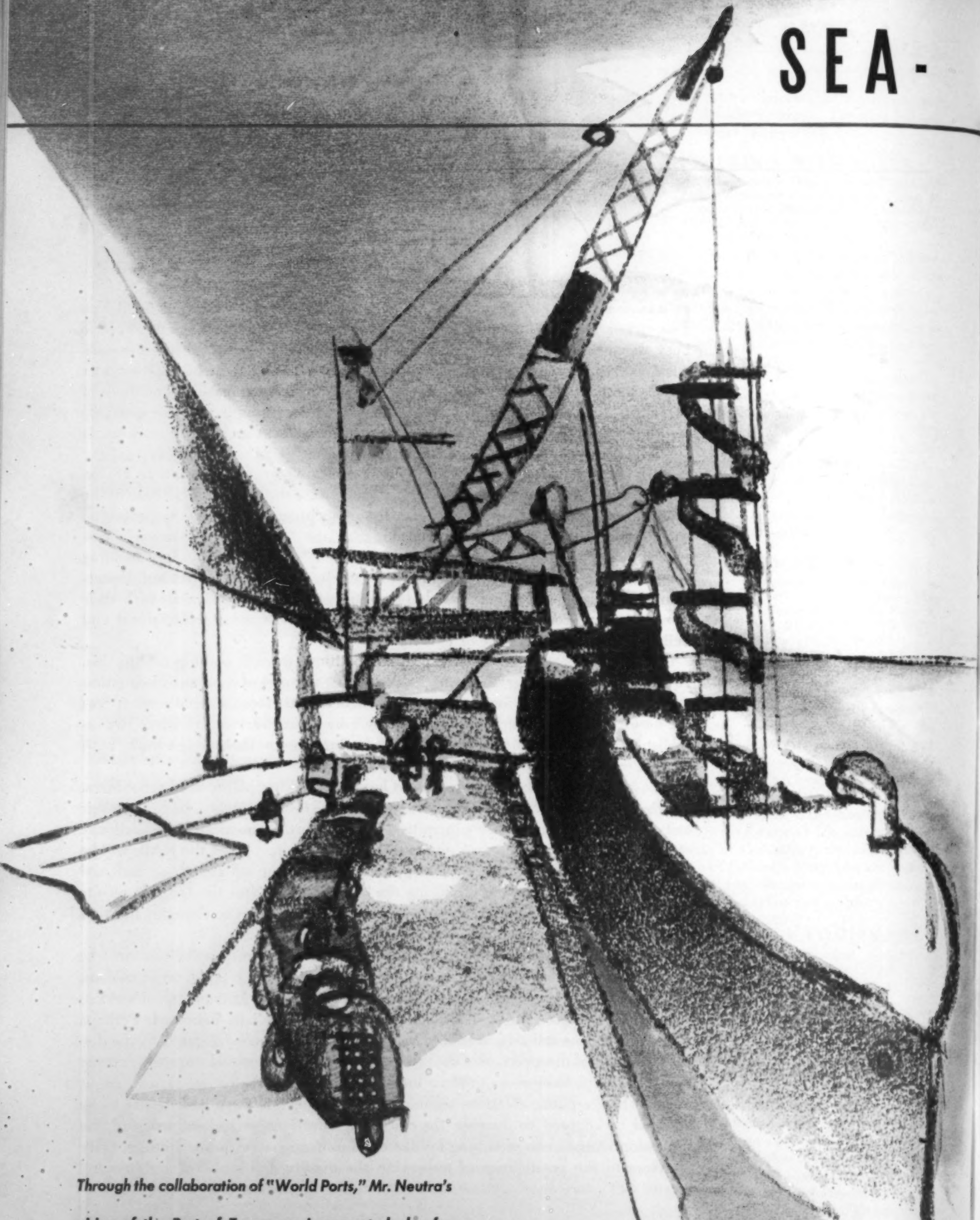
This is the crux of the matter: on what basis, under what policies and procedures, by what methods will the public be convinced of the best methods of obtaining their ends — better buildings and communities, safe, efficient, economical and esthetically satisfying? Through the competition among the groups just listed the public will be able to make its choices; one or two types of organization will emerge as preferred because of their efficiency in producing the kind of service and the tangible results that the public wants. Certainly the profession must be as alert to changing business techniques as to changing building methods.

It may well be that in order to serve society better, new responsibilities must be assumed, new or more complete services must be offered. New types of organizations, new methods of doing business, new forms of contracts, new instruments of service, new educational and public relations techniques may well be indicated. Perhaps some sacred cows must be sacrificed, some traditional taboos relegated to the discard. A study of the methods of the professions' competitors would show their strong points (perhaps their more modern merchandising methods for one thing), might unearth better public relations techniques, might suggest ways and means to be adopted or adapted to increase the efficiency, effectiveness and influence of the profession without compromising fundamental professional or business ethics. Only alertness to the possibilities of improving the quality and scope of architectural service will insure an expanding market for the professions' services.

Kenneth K. Stowell

EDITOR

SEA-

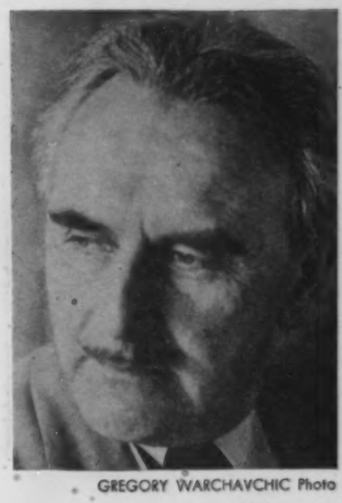


Through the collaboration of "World Ports," Mr. Neutra's vision of the Port of Tomorrow is presented also for officials of port authorities, terminals and ship lines

LAND TRANSFER

BY RICHARD J. NEUTRA

ARCHITECT AND CONSULTANT



GREGORY WARCHAVCHIC Photo

"If these postwar days of world wide port construction and reconstruction will not warm us up to truly new plans, grandly adjusted to a singular opportunity of rejuvenation, then we may not live to see a similar chance arrive once more." All his life a zealous observer of ancient and modern seaports of all the Seven Seas, the author long ago turned his passion for PLANNING toward ports, to the economics that make them transfers, not terminals ("Terminals? — Transfer!" Architectural Record, Aug., 1930), and to the people who toil in them . . . "A seaport constitutes a link in a vastly extended national and global machine, but it also constitutes a community, with human requirements and contemporary living standards."

The first world-renowned ports of the western hemisphere were, I believe, St. Thomas, in the Virgin Islands and Porto Bello, on the north coast of Panama. In the 16th century they illustrated those two distinguishable historical types: the *transfer* and the *port without a hinterland.*

Through Porto Bello, for more than four generations, before buccaneer Henry Morgan sacked it thoroughly in 1668, went all the precious metals of Peru that were shipped up from Lima to the great dividing isthmus, and again all the manufactured commodities and all the adventurous passengers from back home, en route to New Spain beyond the seas and mountains.

By contrast St. Thomas was an end in itself, the hideout, the pirate's den, the gambling spot of the Carribean. It became all of that pretty soon after the Columbus fleet, groping along, had found its passage between these lovely isles, so fit for ambush and so little connected with anything beyond them.

But, generally speaking, many seaports had for long been points at which regular voyages simply seemed to come to their end, to *terminate.* Rio de Janeiro is typical for this sort of a colonial port, which, rather isolated by itself, develops to repeat in time the towns of the home country, or even surpass them, *but from which no great inland route takes its start.*

"Inner Brazil" is even at this late date amazingly undeveloped, in other words, full of promise — and Rio still has much less of a hinterland than, for example, Santos-São Paulo to the south.

In very recent times, it was surprising how short a distance one could drive an automobile inland out of the metropolitan area of so vast a city as Shanghai. In many historical cases like these, the port almost seemed to justify the expression *terminal.* For the most part they filtered and delayed the further movement of people and goods, acting as sedimenting pools beyond which movement could only seep and spread — sometimes with almost imperceptible slowness. However, as Porto Bello shows, there are notable exceptions, and a curious variety in the genetics of seaports.

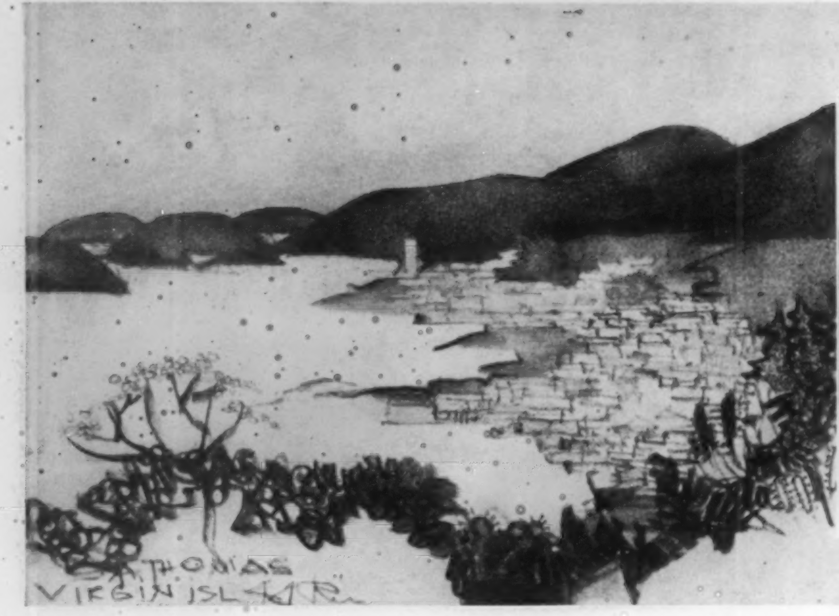
Some of them, even in colonial countries, developed, like Buenos Aires, *after* the "hinterland." The vast Argentine, in those first three centuries of precious metal exploitation in the new Spanish countries beyond the seas, was penetrated at a snail's pace from Bolivia and Peru. World interest in the Southern Pampas was to develop only at a much later date. Then, and only then, Buenos Aires started its fantastic ascent, to become the greatest harbor of the South Atlantic — and that *without any particular natural topography or setting,* such as helped Montevideo, to bring about its growth.

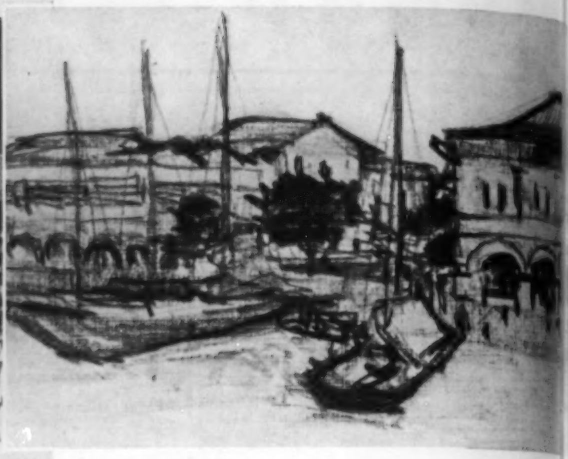
MAN-MADE PORTS

Nature was here overtaken by doings of man, as in the construction of many a modern port. San Pedro, Los Angeles, which in *natural* advantages cannot compare with the unique bays of San Francisco, and an ample number of similar cases would encourage us not to let things happen fatalistically but to *correct fortune by plan.*

It is good to shun alibis which blame nature for our failures. It can be shown that *man-made construction and planned circumstances can often prevail.*

In some cases they do prevail to an amazing degree,





St. Thomas, Virgin Islands, West Indies (above): A typical port without hinterland; it is the historical counterpart to Porto Bello, the famous isthmus transfer of the 16th century Spanish trade from the Atlantic to Pacific, the "South Sea" and greater Peru. St. Thomas and Porto Bello make up the earliest examples of world-renowned ports in the Western Hemisphere.

Far East, Colonial-Portuguese Port of Macao (above, 2nd & 3rd drawings, l. to r.): Waterfronts used to have their architectural flourish, and, even with their habitual depravity, were more personalized and more in human scale than the exhaustingly far-flung, monotonously stretching, unoverseeable shore installations of late-Victorian ports. In Chinese-Portuguese Macao, the ship-to-brothel distance is as short as the walk a man from a buccaneer crew had to take on shore in St. Thomas of the Virgins, to pawn his bit of booty and to get roaring drunk after. Modern ports will be more orderly and sanitary than those of the olden days, but they will also, beyond their technification, be more human than they have been in past and present examples

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as in Santos, which now, quite unexpected by earlier generations, contests the rank of Buenos Aires.

Almost like Hongkong or Singapore, Santos is situated on an island; like the above described Rio, it seems naturally cut off — by a coastal mountain bank, a divide and a bluff of several thousand feet — from an interior that with all its water streams used to turn its face away from the coast and toward the large river of the west.

It seemed by no means a promising situation or physiography for a world harbor, but the unique reversing of water ways on the high plateau, the construction of a system of artificial lakes to head a series of great hydroelectric plants down coastward, have transformed the entire region of harbor *and* hinterland into one of highest industrial potential, into a region with import needs that match its huge and bulky export possibilities. From a one-outward-cargo harbor, Santos has now quickly grown to a most diversified receiver as well.

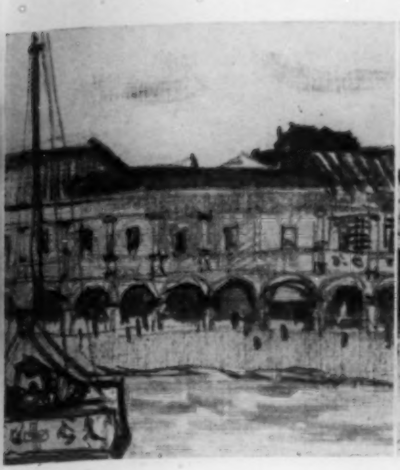
Considering such gigantic successes of modern technological ingenuity, the mere systematic perfection of what too long has been called "port terminal operations" seems encouragingly less difficult.

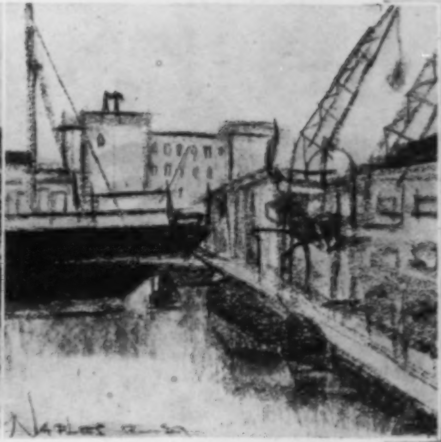
The fundamental attitude here must be *transfer not terminal.* Coordinated, continuous flow fits modern mass transactions best, with no static ending to them anywhere.

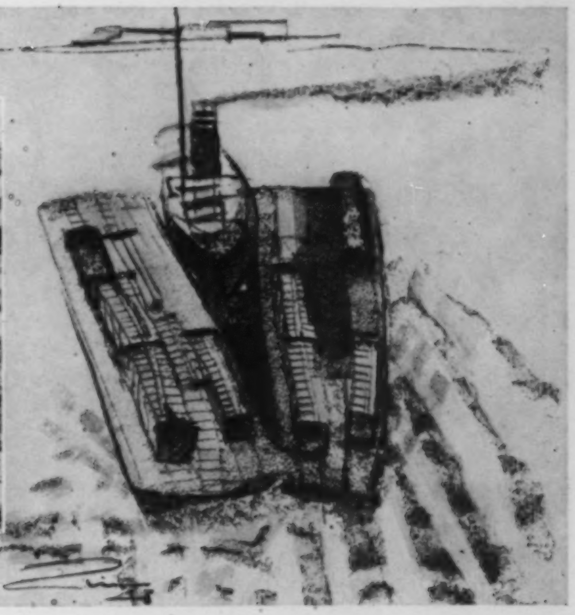
SEAPORT ALSO A HUMAN COMMUNITY

A seaport constitutes a link in a vastly extended national and global machine, but it also constitutes a community, with human requirements and contemporary living standards.

A port has to be considered as to the ultimate capacity it will have, when all its natural potential is fully realized by resourceful engineering in keeping with the economic possibilities of the region served. Then, once this ultimate but clearly limited capacity — the number of ships berthed, the tonnage and kind of goods to be transacted — is as well established as possible, a refined quantitative analysis must be made, and not merely as to trackage of classification yards, floor footage of warehousing, size of graving docks, and facilities for voyage repairs. *Human elements must be recognized and computed:* the numbers of stevedoring personnel, on the basis of contemplated mechanical equipment; and the entire human crew, from pier guards to fire fighters, cargo checkers, skilled mechanics and maintenance men, from steamship agents and pilots to time keepers, railroad employees, and switchboard girls, who all will have to serve this transfer. *Finally the total population tributary to it,* in terms of families, children, adolescents, adults, and oldsters will have to be accommodated. All will live nearby and in articulated residential neighbor-







Naples, Waterfront in Need of Rejuvenation *(above, 4th drawing): Ah, Naples! — a glamorous name: but it was a drab, essentially 19th century waterfront, which the Germans blasted to bits before they left. Two and three story warehouses, with diminutive aprons in front, cast the shadow wherein a tired longshoreman could rest his head on a rubbish heap to hold siesta. Naples will have a new and a greatly promising start like Le Havre, Marseille, Hamburg.*

Tug With Two Floating Sidings *(above, 5th drawing): The freight bagged, crated and palleted uniformly; the huge containers, of which two or three make up the load of a truck trailer; or the flowing type of bulk, like oil, grain or coke, unloaded, handled, transported, stored and warehoused: all these—together with the size and type of carrier from which and to which goods are transferred—are the basic subject of technical port design. Handling larger units, tugging a dozen box cars on floating sidings, gives more efficiency than movement piecemeal and in petty quanta*

hoods of easy commuting distance to the waterfront.

To design a port in this sense means indeed apportioning lanes and transit storage or parking for highly diversified traffic, but it also means calculating and pleasantly supplying the required number of grade school classrooms, day care centers, kindergartens, health substations, transient hotel rooms, less transient apartments, and garaging; above all, of stable homes, and the various recreational and auxiliary amenities which paleotechnic builders always seemed to forget but which modern people insist on. Convenient local shopping, lunch hours, evenings and weekends spent in wholesome recreation call for provisions in the plan; as well as properly laid-out industrial zones and practically connected subdivisions for such light manufacturing as will logically congregate about the port.

Among a host of specialized technical experts, the architect will keep his place if he is skilled to evaluate the human motor behind all the machinery, and is intent on avoiding its exhaustion, by ponderable and, often enough, by subtle imponderable means.

COOPERATION OF AGENCIES

To achieve the desired broader integration, *a close cooperation of many agencies is needed.*

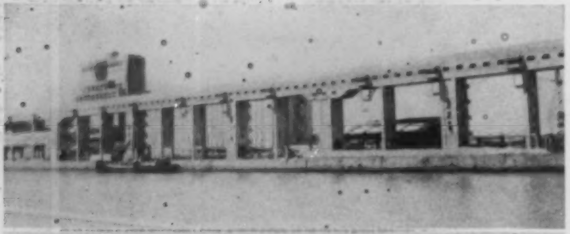
When chairman of the California State Planning Board and visiting for mutual information with local commissions, I was often enough astounded to find that the members of a harbor board would never meet with the city planning commission or the park or school board; they would not know one member of those other civilian policy-making bodies, nor follow their work, or pay attention to the plans of, say, the local Housing Authority. Calling *all groups together into one hall, into joint meetings,* inviting and effecting a regional combine of neighboring communities and of the corresponding county commission, seemed to me the most deserving scheme.

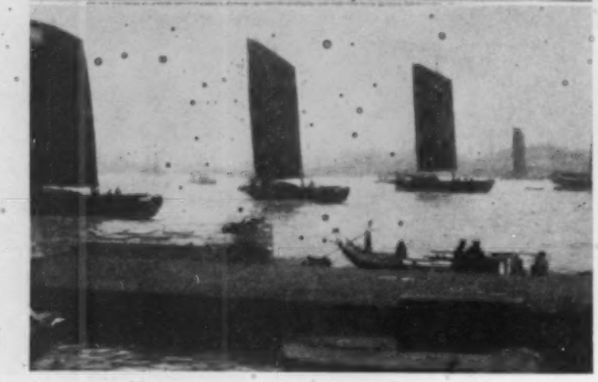
PRIDE OF COMMUNITY

In past periods, not endowed with the technical means of virtually limitless multiplication, human scale was more or less naturally preserved. Standing under Galeazzo Alessi's Porta Marina, anyone could overlook Genoese shipping in one sweep. The best architect of the Republic had chosen the spot and made the layout.

In those past periods the economic activities had been more clear to all, more conspicuously over the table — in fact they were the pride and exhibit of a community. The jewelers' and goldsmiths' street, the potters' shops in a medieval or any oriental town, the glassmaking of Murano-Venice, all the industrious occupations of a

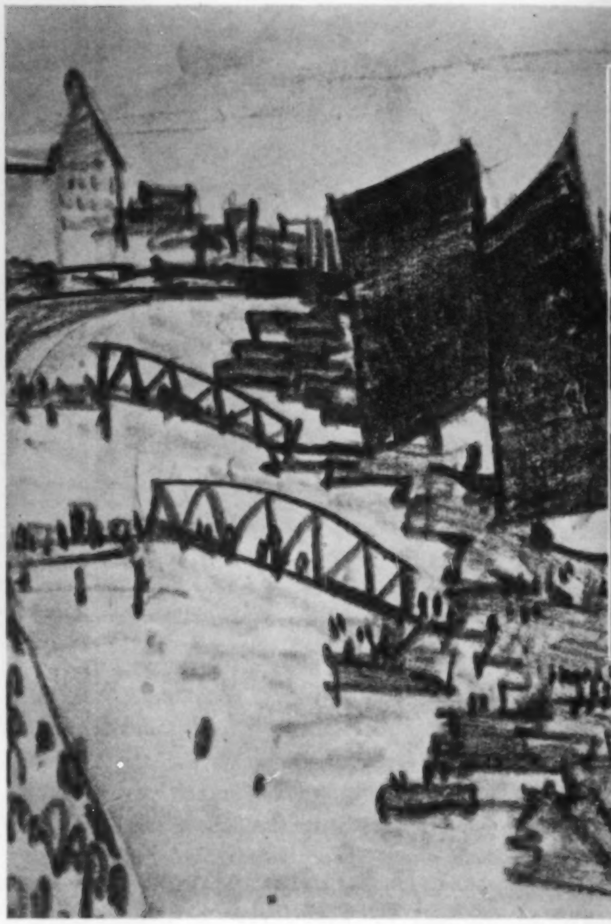
RICHARD J. NEUTRA Photos





The Brand New German Built and Never-Used Grain Elevators of Buenos Aires *(above, top) are an example of the need for world-wide interchangeable technique and equipment. The German contracting firms have disappeared and no other equipment but theirs fits the extensive structure.*

The River Port of Shanghai *(above), crowded with black-sailed junks. Picturesqueness has to make up for a rational pattern.*



place were quite conspicuously located and comprehensible to the eye, whether in Cairo, in Canton or in Nuremberg. The seaport with its foreign ships, big and small, was something to look at, to appraise in a glance, and to be proud of — in Antwerp, Basra, Valencia, Marseille, or Lübeck.

When, however, the real mass-handling started in the Victorian age, dry exploitation of space, material, and human beings took not only to a bewildering scale, but also to a manner not in keeping with official moral concepts. Industrial activities were generally banished out of sight and, as well as possible, relegated to ever new mistreated outskirts or sacrificed "faubourgs," as the down-town Parisians would call them.

However, this process of pushing the new technified activities about in the community, as a bastard stepchild, was, in the case of the seaport, not so easy. The waterfront was there and simply could not be pushed away. It could be developed, though, to be humanly bearable, according to an integrated plan, according to a feeling of the oneness of life — in and out of working hours — or it could be publicly and grossly exploited, humanly neglected, as a depressing man-made fringe of desert.

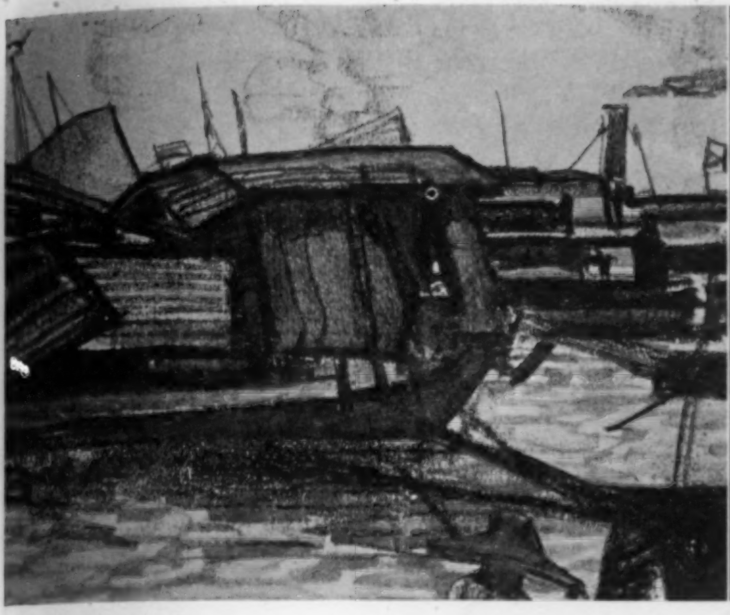
But in fact harbors, as in some classical examples, can also today be more attractive than railroad stations and airfields. While ships, picturesque, old fashioned, or modern, are not and will not be as fast as streamliner trains and jet propelled planes, they are really more pleasant in their motions, arrivals and departures for anyone watching them from a café terrace, and they are less noisy.

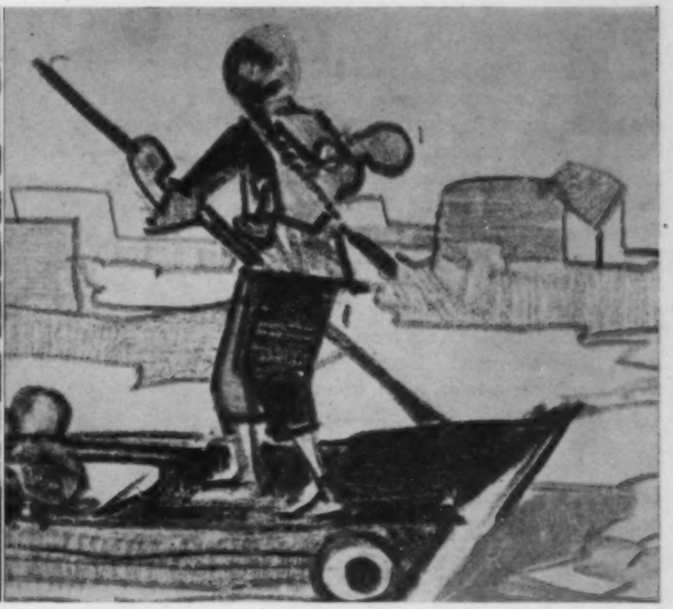
In Montevideo the city administration has recently built a noise-removed café restaurant at the slope of lighthouse hill. The view over the harbor is the loveliest sight in town, and points the way to esthetical considerations in any new or to-be-improved port.

Arrivals and departures should be pleasant memories — for the traveler, certainly, as well as the onlooker. But as it is, they are too often memories of drab confusion, of psychological fatigue, of physical discomfort. There is no opportunity for the traveller or visitor to master and integrate his first impressions. The mere task of orientation, of finding a place, a particular office, a transit shed, a ferry — and reaching it unexhausted — should in itself be a consideration for suitable design.

WORLD-WIDE UNIFICATION

In many respects a seaport is a most significant example of today's planning problematics. In general, *land-sea transfer*, or what used to be called "terminal operation," is becoming a systematic technique, which should lead to broadly acceptable principles and standards, just as air transfers and airfields also tend toward





"Bund" and "Go Downs" in Shanghai *(left): But port work, even with all improvements, is never so hundred-per cent mechanized that it does not profoundly depend on human beings to get things done. Ports may have had their glitter and soaring incomes, but they also have too often been known for debasement of humanity, moral and physical filth. Shanghai used to boast its "bund" and numerous "go downs," where starving coolies, with many-voiced sing-song, carried back-breaking loads, only to gain a handful of rice and to sleep nights in any dirty alley.*

"Sampans," Floating Housing in Far Eastern Ports *(above): Many thousands of longshoremen in Singapore must lodge their families in house boats, the watery counterpart of our emergency living in trailers with the same tendency to turn permanent.*

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unification all over the earth. Our technological civilization is at bottom cosmopolitan in its trends, and port designers must here be leaders and path finders.

Of course, we know that a pleasing harmonization and the shrinkage of the globe is painfully obstructed by background contrasts and economic discrepancies. Widely divergent wage scales and labor supply will engender equally divergent methods and pose difficulties in finding a common denominator for a peaceful world civilization.

Sea-land and air transfers show up this transition difficulty in brightest relief; but they also may become crystallization points for tuning a modern world together. Provincialism *per se* will finally have to wither in the face of global needs.

Too many new features and considerations to be ignored have entered the field since the pure railroad age created its harbors. There is tailgate loading of trucks. There is the cab-over-engine tractor, which has transformed the waiting truck driver into a busy man, spotting and picking up big trailers. There is the docktrain tractor pulling and depositing here and there miniature and not-track-bound freight trains (up to 12 small low units), slipping through side ports on ship, rolling along its decks, as on the floors of transit sheds, of warehouses and in the wide span halls of "portside" industries (which now can really be a mile off the waterfront). Docktrains rise on ramps, reach overhead boxcars and special truck loading docks, and feed gravity conveyors and chutes. There is the left truck, numbly wheeling and working in boxcars, *a carrier entering the inside of another carrier.*

A nationwide, perhaps a worldwide, regulation and standardization of means and methods, above all, of ship length, berth length, as well as general length and cross-dimensioning of piers (of course, with all due consideration to special cases and particular requirements) may ultimately be anticipated. Also the dimensional standardization of cubage for crates, pallets and containers — in rational relation to dock and truck trailers and modernized boxcars, to customary lifting and traction equipment, as well as to tiering space and stacking height.

Optimum elementary units, established first, lead naturally to a design in multiples of such a module, which will have to find approval of the maritime commission and last but not least of the practical operators, the steamship, trucking, and railroad people, whom port administrators should mobilize as voting consultants, before architects' and engineers' proposals are given the go signal. Vessels will then not have to be shifted ahead and astern, holds will always coincide with shed doors, and the entire over-all pier traffic pattern will achieve the needed integration and harmony.

A planned port will set a new keynote, overcoming the endless drabness of material exploitation, the mere striving for technical efficiency and the debasement of humanity near an important working place. We try to find even a quicker "way out of Manchester," than to get drunk like a sailor — and it will be a more over-all wholesome way, too

1

Typical docks 750-feet wide: all electric supply lines underground; high-line double tracks along 50-foot wharf apron; fluorescently illuminated, free-span transit sheds, 120 and 200 feet deep, windowless; overpaved low-line trackage between sheds and truck-loading dock space. Warehousing largely removed from harbor to "consumer's ends" of metropolitan region. Port-maintained heavy equipment such as portal cranes, coal loading equipment, grain elevators. "Gear corrals" for stevedoring companies, with free-wheeling equipment (dock-trains, lift up trucks)

2

Lighthouse promontory park: drives and bridle paths leading toward town center, and to vacation beaches on North Shore

3

Repair docks, west, oil harbor, east (with pipe line to refinery); centrifugal pumps load a tanker in six or eight hours. 10,000 barrel barges motor to slips and refuel ships during stevedoring operations

4

Intermediate warehousing facilities accessible to railway sidings and freight-trailer parking ribbons; with 3-ft. 10-in. loading platforms, 50-ft. truck drives in front, helicopter roof loading docks

5

Lumber import and storage area. (Lumber export harbors with timber pool and portside saw mills require special planning also in relation to inland water ways)

6

Employees' parking and lunch recreation area with garden-porch canteens, health stations, game facilities, all accessible to industrial operators, shore and ships' crews

7

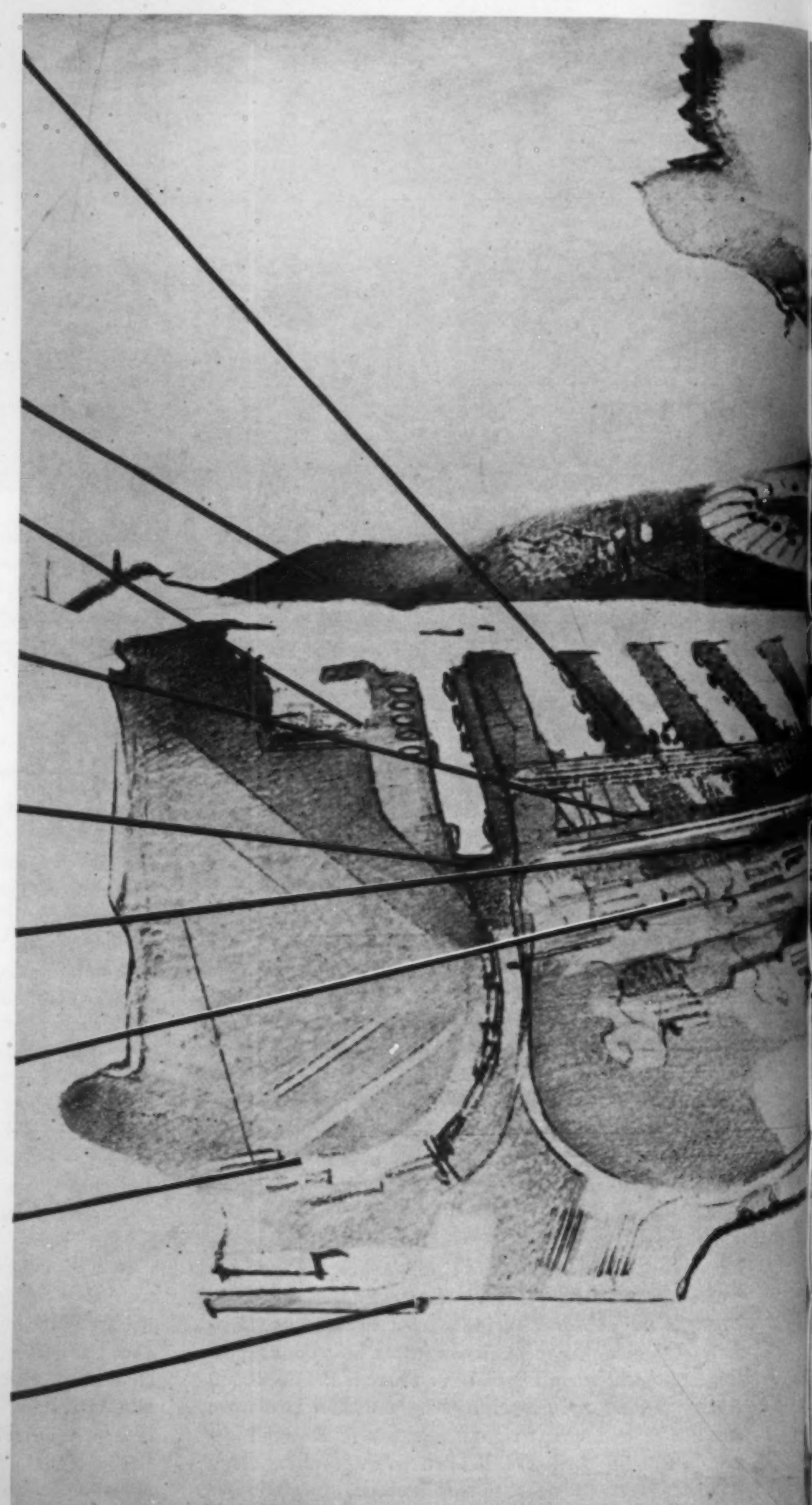
Portside light and subsidiary manufacturing (smaller establishments without need of immediate water frontage), accessible to dock trains directly from shipside by a system of under- or over-passes

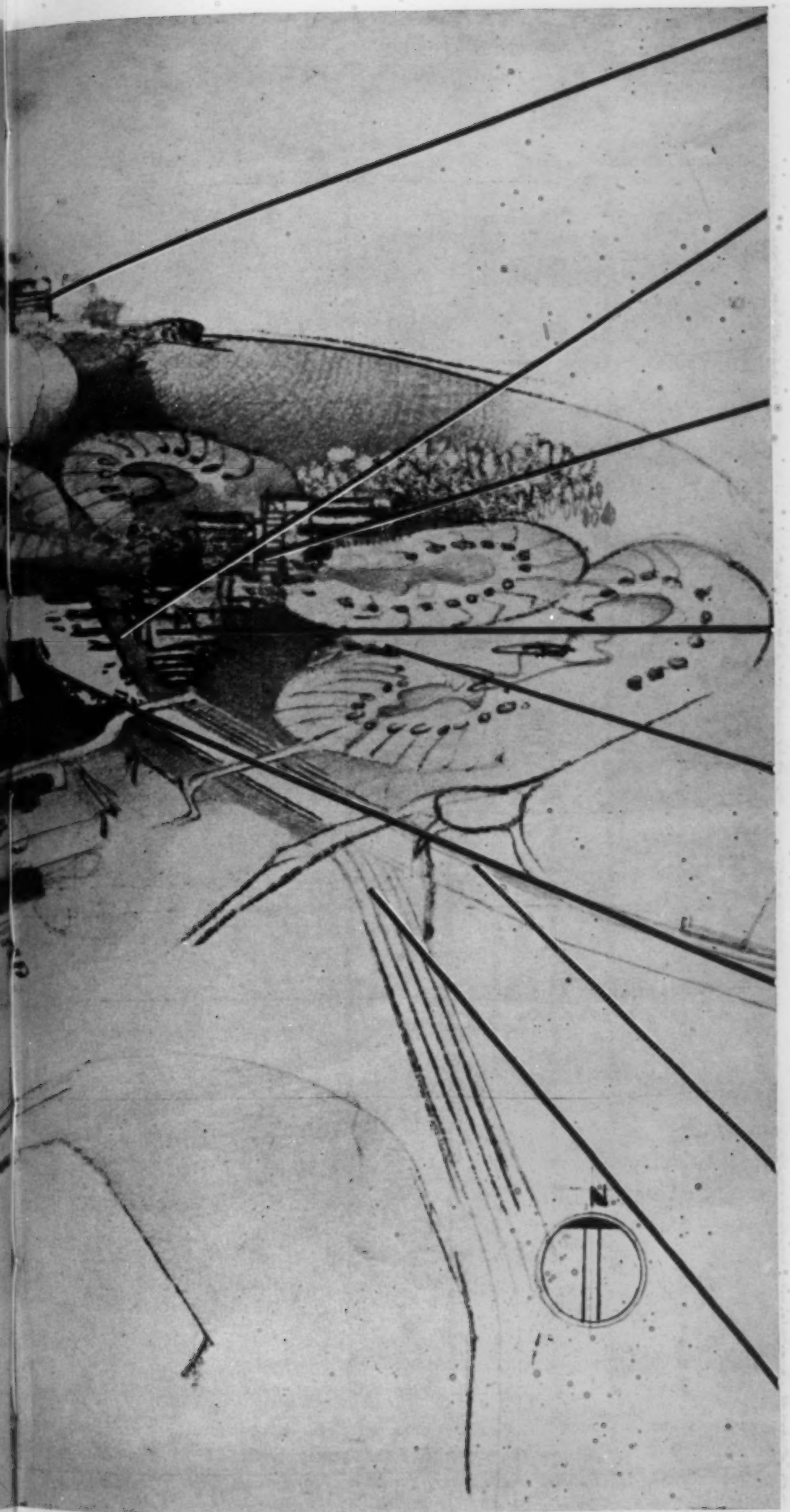
8

General freight airfield for inland distribution and collection of speed freight. Warehouses leased to companies operating their own air-carrier fleets. Dock-trains drive to wharf aprons; tracks connect directly with low and high pier lines

9

Sea plane base and entry to "extension basin," with such portside industries as require immediate water frontage or large areas; or which are obnoxious and require segregation (fish canneries; oil refining, borax, potash plants, etc.)





10

Beaches which make North Shore resorts the weekend and holiday areas of the port people and the metropolitan region, are segregated as well as possible from port traffic on land and sea

11

"The Quay." Town waterfront with ferry and suburban-island commutation wharfs; buildings of port administration, marine exchange, radar and radio operation, port police guard — headquarters, post office, etc.

12

Hotels and transient apartments at conflux of residential commuters' area, near terminal of Monorail Rapid Transit to city, central helicopter park and adjacent country club area on the northeastern rolling hills. Seamen's and port hospital on 30 acre plot in wooded area, east-northeast

13

Port shopping center slightly elevated, with central underground parking facilities above high tide line, and peripheral multi-story garage zone adjacent

14

Residential neighborhoods with belt roads and stub-end service drives, a pedestrian green core to each neighborhood, with communal recreation grounds and desirable facilities from health sub-stations to branch libraries, day care centers for children, kindergartens and grade schools

15

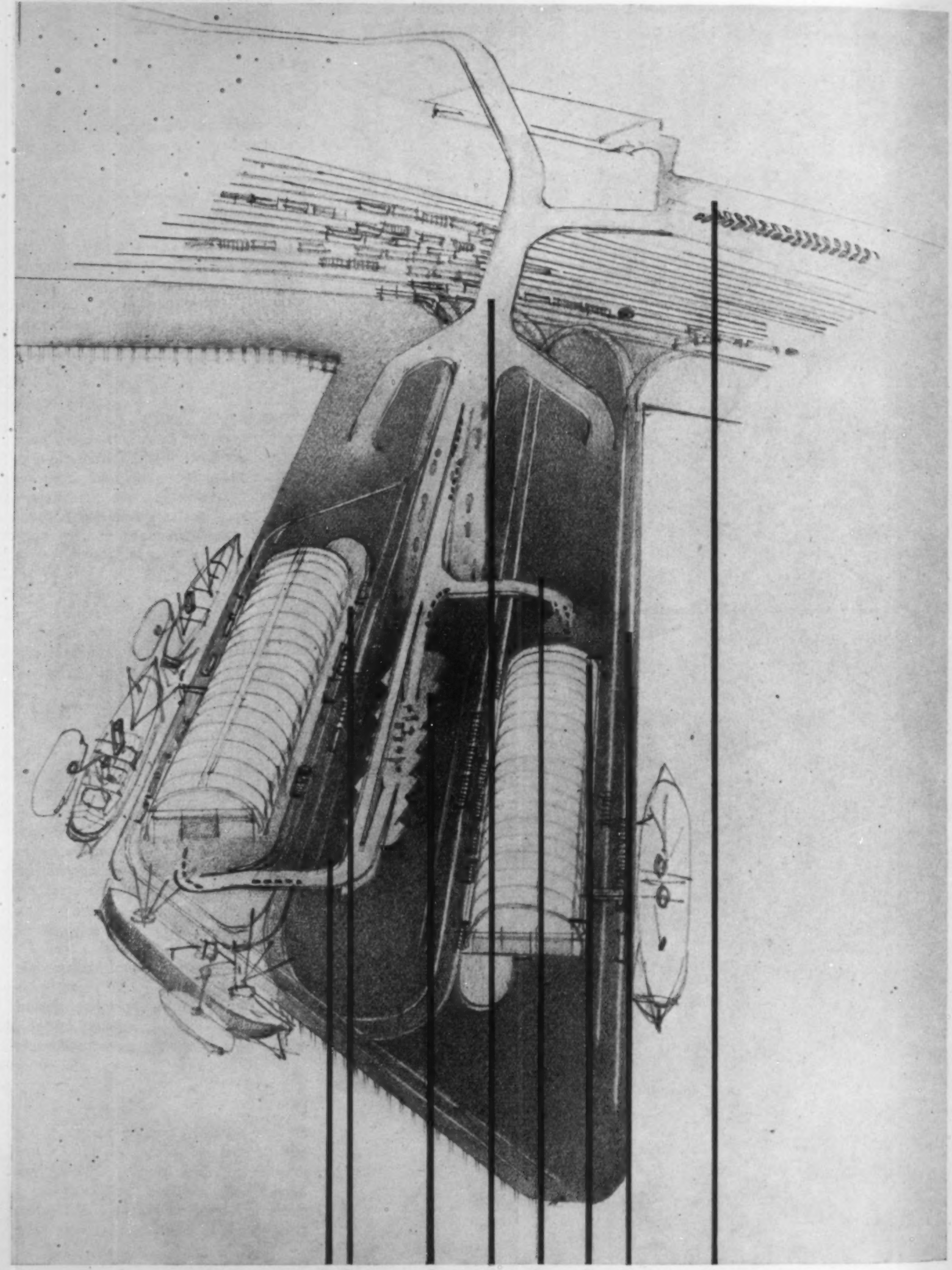
Passenger docks for several transoceanic lines with two-story transit sheds, passenger gallery and portal-supported "gangplanks" or embarking bridges, rolling past berths on waterfront tracks

16

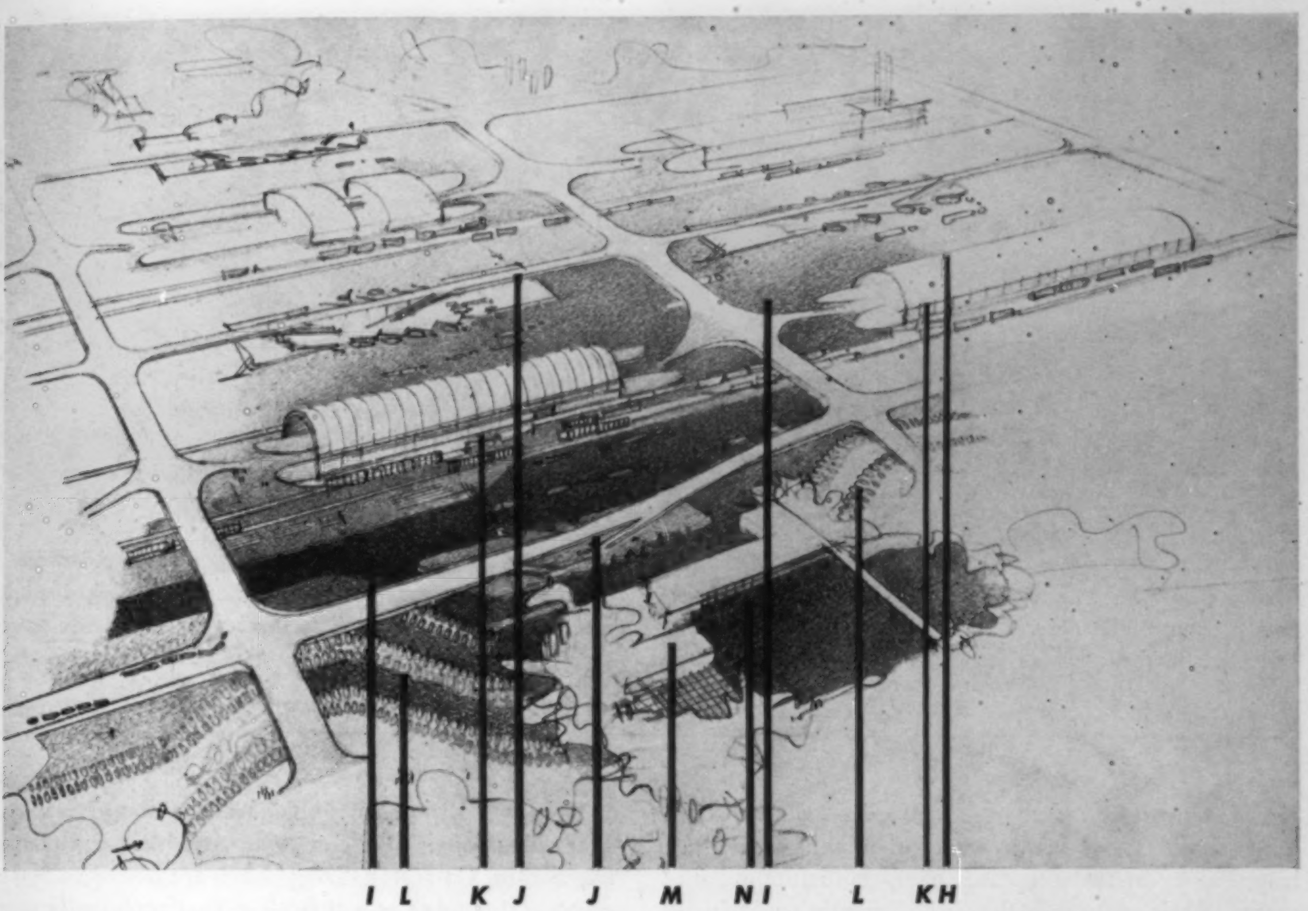
Six lane parkway, passing passenger air-transfer east and leading within 1000 foot landscaped strip, partly between residential neighborhoods and partly along heavy industrial development and extension zones, to metropolitan center area

17

Trucking super-boulevard, straddling Rapid Transit to city, paralleled by Port-operated electrified railway-belt line which connects all industrial zones of "Rush City Reformed"



Schematic Sketch of Pier: *With (A) 200-ft. free span sheds and continuous broadside door arrangement both to (B) 50-ft. wharf aprons and to (C) 15-ft. loading platforms at lowlines. Dock-trains cross overhead (D) to specialized truck trailer loading dock (E), and all rubber-tire traffic reaches level free crossing (F) over rail sidings and classification yards to trailer parks (G). Berthed vessels may break out cargo onto both wharfs and lighters, and refuel simultaneously from barges in ample slips*



Portside Light Industries cannot all have and do not all need immediate water frontage but they all call for a new type of subdivision and segregated traffic provisions. (H) Wide-span, unobstructed plant structures for mass handling need a continuous raw material approach, by rail, over-the-road-truck-trailer, and docktrain from shipside. Finished products may leave by the same three types of carriers, and thus also reach the air freight terminal. (I) Rubber wheel traction elevated. (J) Truck trailer loading docks without interference with box cars spotted at lowlines (K). (L) Parking lots of workmen and employees. (M) Lunch canteens, and (N) recreational green area, play field, health substation, etc.

HAND OPERATION STANDARDS FADING

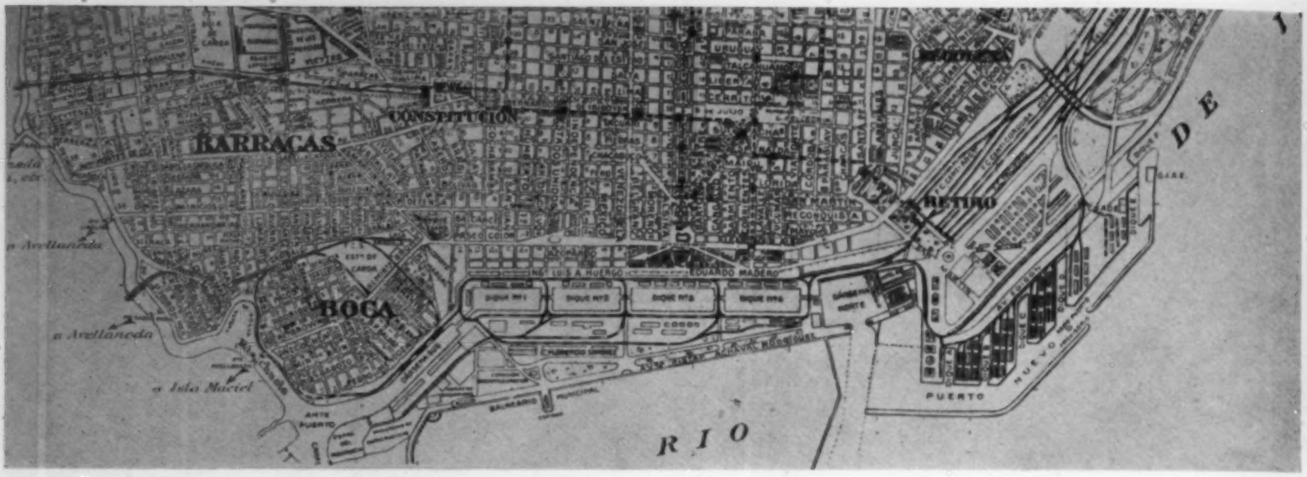
In certain Asiatic and African ports natives are still ready to dive three minutes for a nickel, and their diminutive wages keep out more rational and more human methods.

But also in these United States, if we analyze it correctly, long past pay scales, and in keeping with them, hand operation in breaking out and moving cargo, once upon a time established a great deal of our still existing pier layouts — for example, practical cross dimensions of transit sheds. Now, the fact that inadequacy of hand equipment, and layout to suit it, means that there will be congestion-crippled ports and that terminal operation, as it is, may run as costly as the entire water transport, calls for measures which cannot well be too far reaching.

We need a sort of minimum quanta theory of cargo handling, so to speak. Unit volumes, unit loads, unit energy exertions, which the mechanized stevedore, the railroad man, the truck driver who picks up properly maneuverable trailers, find optimum common denominators for their operation, must be recognized by the producer, by the crating designer, the makers of containers and pallets. Thus also the stowing on dock and in ships' holds may become unified accordingly and less of a puzzle.

The containers may turn out to be expendable and thrown away in one case, or stabilized and re-usable in the other; they may be weatherproof and obviate the protection of transit sheds. Still they may fit into a modular system of volume and have the unified handling feature of allowing the tines of a fork truck under the load. Or perhaps the overhead handling gear or crane will have its comeback for handling the more colossal ones of these containers of goods.

First must come the establishment and acceptance of basic quanta governing containers and handling equipment. Then, the paths which these elemental particles must travel, the routes of their carriers within sheds,



Map of Port Buenos Aires: *From the "Boca," with its Genoese fishermen, to the newly filled-up and well-landscaped shore park area at Barrio Parque (upper right), the Buenos Aires "Diques" and new harbor stretch intimately at the front lawn of a capital metropolis, with the Plaza de Mayo, the President's pink palace, the Plaza San Martin facing the ships. There is pleasant tidiness about this great southern port, and administrational skill and ambition for a representational setting is evident*

---

outside on wharfs and along the inner lines of piers and quays could stand better segregation and should be helped along by the acceptance of the minimum quanta theory. Their continuous flow would greatly profit from elimination of all possible mutual interference.

Circular routes are generally the correlate of such a continuous flow. In principle the design must establish them, and they must be made elastically possible for adaptation to particular cases. Almost continuous door opening along all shed fronts is a vital point in this desirable flexibility.

CROSS TRAFFIC

Free wheeling mechanical equipment should ideally have its opportunity to level-free cross-over from pier front to pier front, from shed to shed, from trucking dock to ship side or to nearby industrial establishments. Power operated bridges are a solution that take time and energy. They are far from automatic. Two level traffic systems, with easy ascent and descent ramps, may in some cases pay for themselves. Seven per cent grades are recommended for loaded fork truck or dock tractor pulling its train of trailers.

REDESIGN FOR MASS FLOW

In a time of air freight on the increase for less bulky quality goods, sea cargo may become more uniformly of the bulkiest kind, and unprecedented mass transactions will dominate the pier and port scene.

If these postwar days of world wide port construction and reconstruction will not warm us up to truly new plans, grandly adjusted to a singular opportunity of rejuvenation, then we may not live to see a similar chance arrive once more, until indeed atomic bombs are being scattered for the final general leveling.

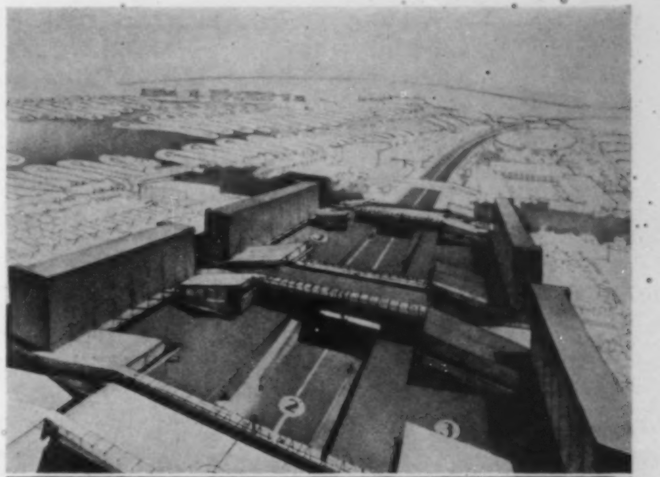
Le Havre is now in rubble, like Hamburg; Naples, Marseille, Kobe, Manila are war casualties; and places like Santos, Galveston, Long Beach are bound to move up several notches at a time — so that profoundly new starts, not only piecemeal improvements, are going to happen under our eyes. It is probably an unprecedented moment in the history of port renewal and planning.

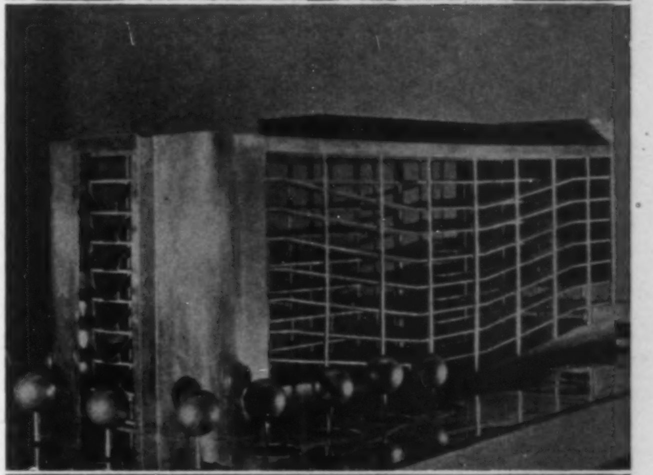
And so a picturesque variety of suggestions are at hand. But naturally, all proposals and novelties ought to be tempered with the practical know-how of experienced waterfront men. The bold and original, as P. R. Shoemaker, chief harbor engineer of Long Beach says, must be merged with the conservatism of tested routine.

PASSENGER PIERS

One wonders whether, apart from a few mass immigration and pleasure cruising ports, steamship passenger disembarking facilities will be overtaxed, as undoubtedly will be cargo provisions. However, to cut interference on the cargo handling level and give safety and and comfort to the passenger, specific designs are well foreshadowed and will undoubtedly develop in practical application.

Such a cargo-passenger "terminal" provides a one-story type shed structure, with a shipside mezzanine passenger corridor. This again connects to shipdeck by means of an electrically operated, automatically adjustable traveling landing stage, gangplank, and platform for the handling of baggage. Baggage inspection, etc., is also placed on the upper level. There is cross connection by overhead walkways above the cargo ground floor, to landside and to the elevator which lowers passengers and their baggage to street level, taxicabs and auto park. Accident risks are here, as always, best minimized by suitable segregation and organization of traffic.





Free Ways with Level Free Crossings (top, right) and commercial centers placed between residential neighborhoods will connect the harbor area with other sectors of the metropolitan region; by their accompanying zones of landscaping these arteries will wholesomely articulate the vastness to which modern communities tend.

Multi-Story Parking Garage (2nd from top, right): Passenger cars, like all other vehicles and carriers, will accumulate in large numbers about a port. Provisions for them should be no afterthought, and horizontal acreage may not suffice.

Portside "Neighborhood" (3rd from top): Housing projects at seaports may often be greatly benefited by lovely, sometimes panoramic, outlooks over sea or harbor.

Channel Heights Housing Project (bottom, right): Built for the Housing Authority of Los Angeles, Howard Holtzendorff executive, L. S. Wilson consultant, takes all possible advantage of the promontorial ground configuration of the Palos Verdes Peninsula. The living quarters of every dwelling face down to the Pacific. All communal facilities and local market and trading center were part of architect's planning work. (Richard Neutra was architect for all projects described above.)

MORE SPACE AND OPENINGS

Apart from a diversity of specialties, stands *the principle of allotting more unobstructed and elastic space* to aprons, to dock stowage and transit sheds, to railway cars, to over-the-road trailers, backed up onto loading platforms or onto special docks of their own.

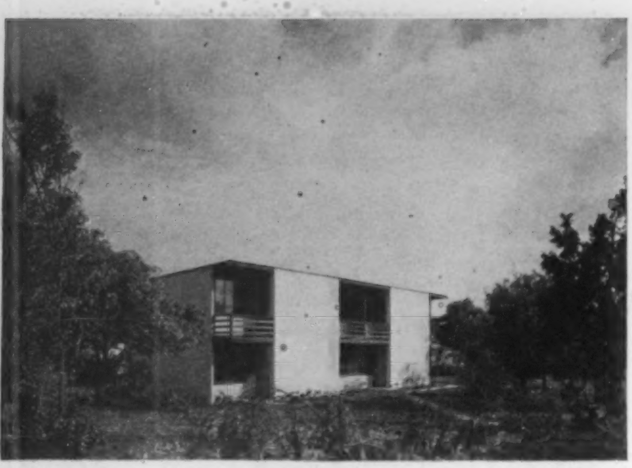
The opinion grows that a wharf of 50 feet may be very superior to one of 32, in allowing track passage to neighboring berths or to spot boxcars and truck trailers under the hook opposite the holds of each ship. Free span sheds of 200 feet width and more, and practically continuous front doors, working upward, somewhat like in the new Long Beach proposal, become more frequently constituent parts of pier design; end doors take on new significance when docktrains begin to serve segregated truck loading docks.

LIGHT AROUND THE CLOCK

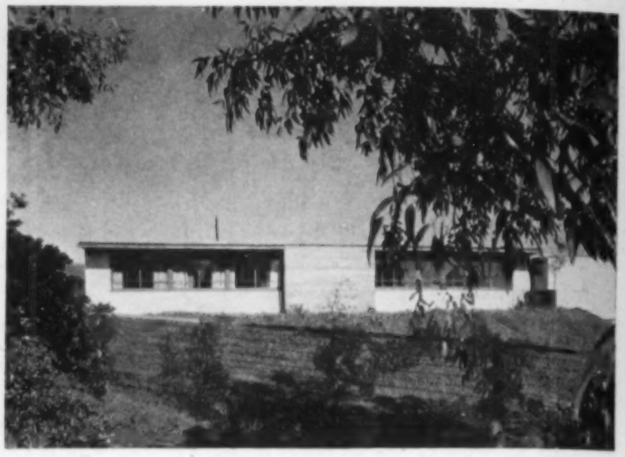
Industrial engineers for the manufacturing and production field have increased — even almost doubled — the output, while cutting the accident rate, by proper and well-distributed, shadowless illumination. But they have also recognized that daylight hardly ever does the trick economically or satisfactorily, and that modern mass operations utilize expensive facilities best by a continuous sequence of working shifts. Once general and well localized night lighting is installed, it may perhaps best serve around the clock. Weatherproof flashing and glass may be forgotten together with the more complicated structural features to provide for daylight.

EASING OF WORK

Managerial supervision from an upper level, with a catwalk-network, with loudspeakers and intercommunicating microphone connections, engage the



JULIUS SHULMAN Photo



JULIUS SHULMAN Photo

For Port Labor in Green Setting: *Two-story row houses (above) and ground floor double houses (above, 2nd photo, l. to r.) serve the families of longshoremen, chandlers and shipyard workers, who, in their spare time, grow their own vegetables and flower gardens.* Grade School in Green Setting *(3rd photo) and* Kindergarten *(4th photo): are needs of the new living neighborhoods to be developed within walking or easy commuting distance of the harbor.* Health centers *(perspective,*

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imagination of designers. Paper work should be shot from office to office through a system of pneumatic tubes, instead of cluttering the place with runners and messengers, like highroads of the Persian king. Finally, there may even be broadcast exhilarating music over the docks, a late and more accomplished substitute for the coolies' sing-song on the go-downs of Shanghai which, as I noticed, sweetened a bit and eased so much hard and sweated work.

But more important than all gadgets and trimmings is the substructure itself. Concentrated and impact loads on the pier deck may be on the increase, and solid level and mildly ramped, non-skid floors, with tracks always over-paved, and with lane width and curve radii provided for the maneuvering of dock trains and heaviest truck trailers, will become characteristic, not only for pier design, but for the layout of the entire warehousing and portside industrial area.

PORTSIDE MANUFACTURES

Portside industries may, of course, be of a great diversity and vary profoundly from one geographical location to the other. But, in general, they may by proper provisions partake in the immediate benefits of free-wheeling mechanical stevedoring and port traction equipment without themselves being directly forced onto the precious and restricted waterfront itself.

Granted that light manufacturing of a mass output is the typical industry at immediate portside, shop fabrication for large quantity housing may serve as example.

It may need raw material approach by truck, by rail and water of several hundred thousand board feet of lumber a day, and perhaps twice as many square feet of panel board, plywood, etc. to produce the elements of a thousand houses a month. The finished panel elements will go off the plant on the other end of a hall of say 300 feet width by 1000 or even 1500 feet lengths.

The mechanization of a continuously running production, the suitable assembly line, will, of course, be very diversified for different products, but there is, in most cases, the same character of a non-stop *flow from whatever external transport carrier to the internal carriers within a hall of extraordinary dimensions.*

No belt conveyor can interrupt action, no truck or docktrain can overpark its time at the loading platform, no ship must be berthed longer than pre-allocated — or *all the facilities and their time capacities, as well as the required spaces, appear at once dimensionally out of gear.*

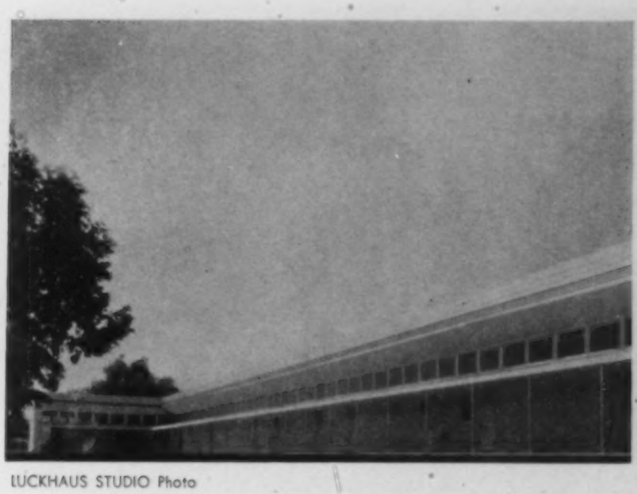
A new type of subdivision for light industrial zones is needed, providing for circumflux of diversified traffic with level-free intersections on one hand, and on the other for employees' parking and recreation areas.

The bewildering contrast between an amorphously stretching desert of technico-commercial activities and far distant residential areas which alone are allowed to have human aspirations, is not the only and certainly not the most truly productive or timely approach to a contemporary order of things. The solution must become well-rounded and more equitable.

IN CONCLUSION

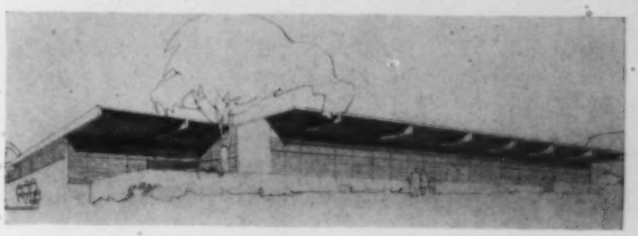
Technical perfection in quasi-automatic harbor facilities concerned with an almost continuous flow of goods, based on and helped by the rational unification of containers and cargo elements — is, after all, *only one line* of progress for a coastal transfer. *The comfort of the numerous human beings* who spend their working lives on and about the docks, of travellers and ships' crews, of the labor employed by portside manufacture, of a concentrated shore population at large — call for a

JULIUS SHULMAN Photo



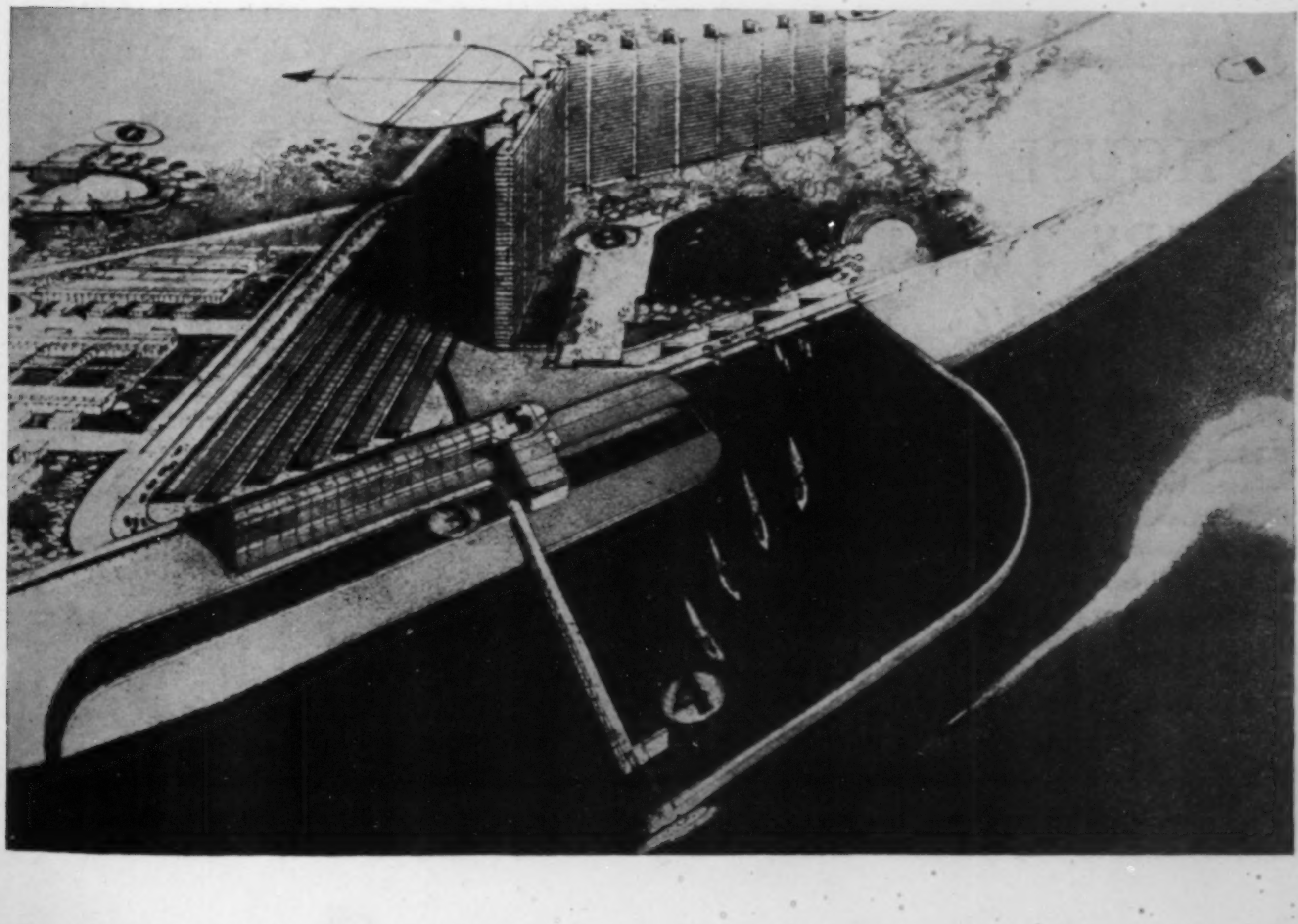
LUCKHAUS STUDIO Photo

right) must serve even small ports, and sub-stations be as well distributed over working areas of the harbor as over residential neighborhoods. Health Department, Harbor Commissioners and Metropolitan Housing Authority must work hand in glove

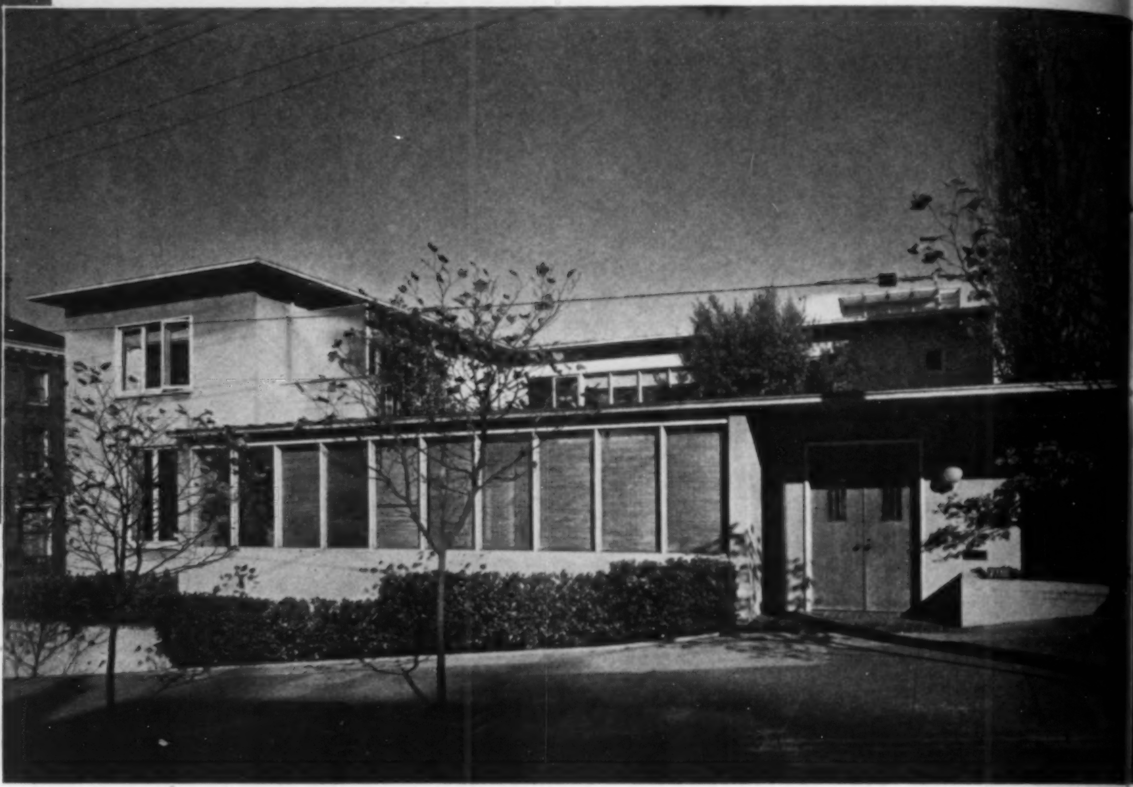


more circumspect, a farther reaching, a more wholesome design and for a planfully integrated layout, so as to make a truly *living entity* out of the far-flung installations, the tributary industrial, commercial and dwelling areas that cluster around the modern mass transfer of a seaport.

Suburban Holiday Beach for the People *(below) is segregated as well as possible from port traffic on land and sea, but it serves the port population and the entire region with its sail sport, shore amusement park, bathing establishments, yacht harbor, vacation housing, and summer schools. (Richard Neutra was the architect for all projects shown on these two pages)*



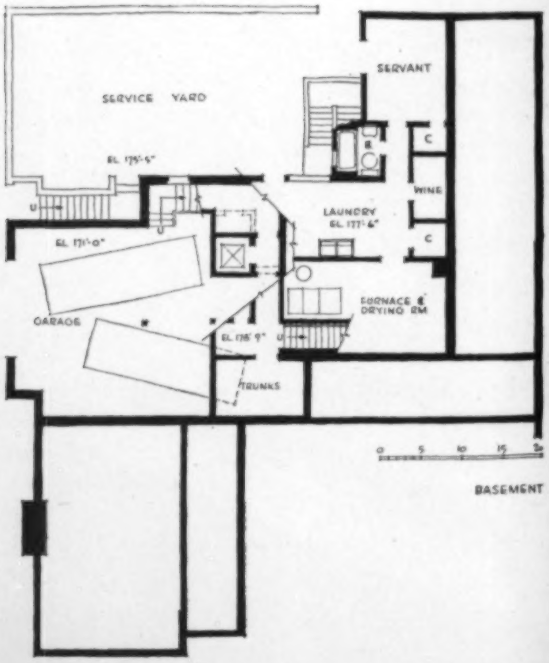
Main entrance from street is an open passage along the enclosed living terrace, a patio where family and guests may soak up sunshine and still escape the trade winds that so often bring a chill to the hilly spots in San Francisco. Planting consists of a large olive tree in one corner, a magnolia stellata in another, and azalias, dwarf lemon trees along with seasonal flowers. Children have their own outdoor area, where toys supplant the flowers

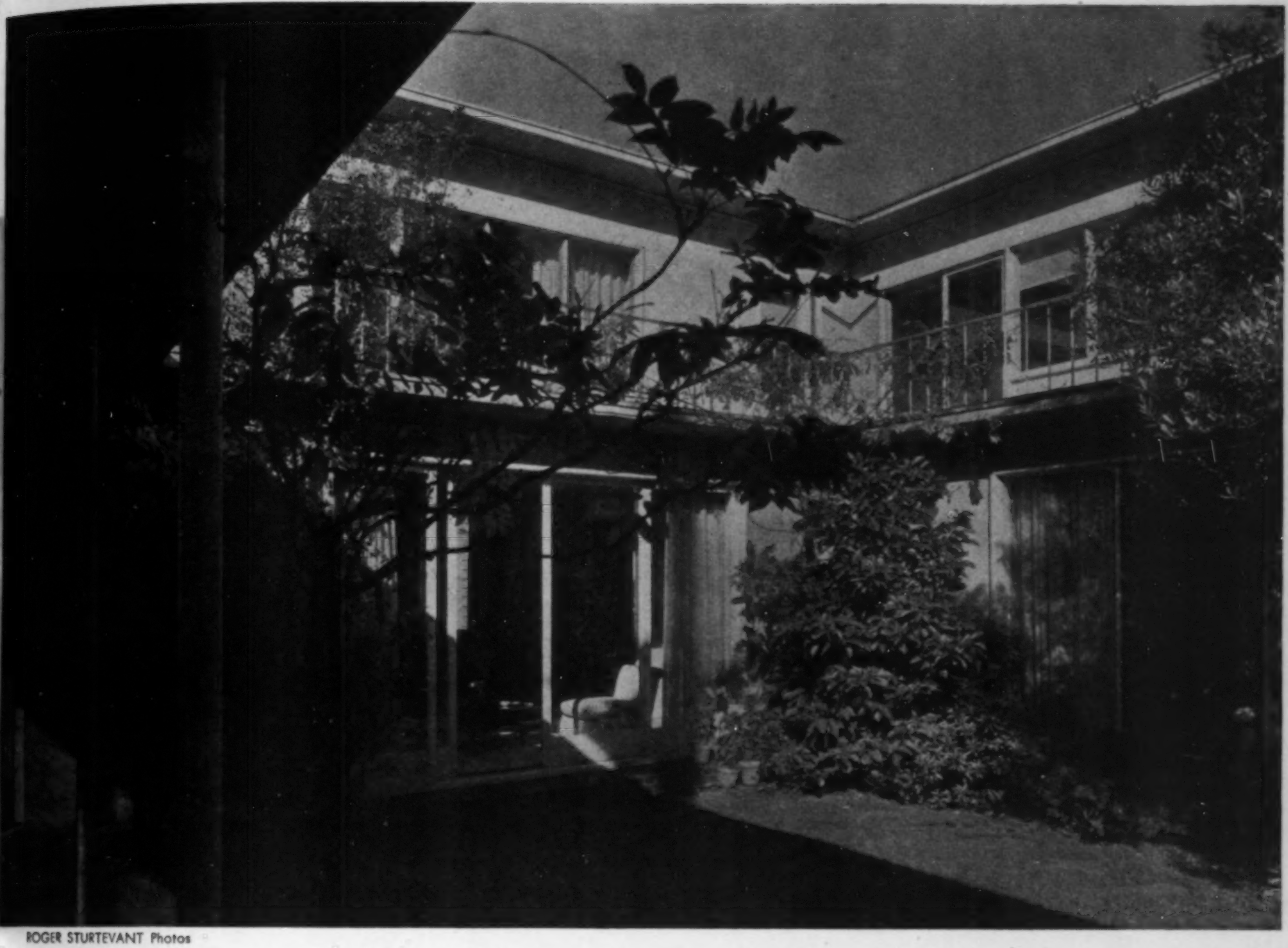


A HOUSE DIVIDED KEEPS THE PEACE

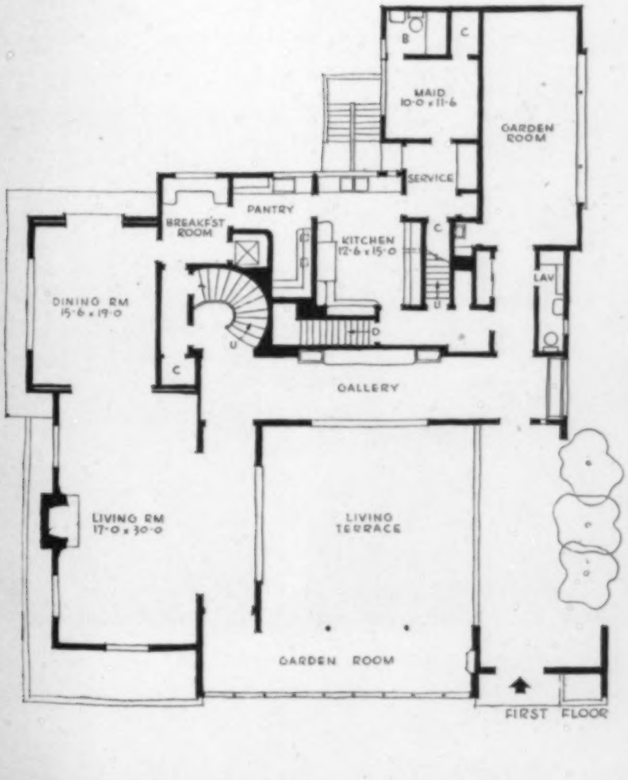
James P. Bradley Residence, San Francisco
Gardner A. Dailey, Architect

HERE is a plan that requires, and repays, considerable study. Gradually it becomes apparent that functionally this house is really two houses, one for the children and servants, one for the grown-ups and guests. The clients asked that this dual concept be carried out also in the outdoor living spaces, to provide a fairly formal living terrace for grown-ups, sheltered from the San Francisco winds, and a play yard where youngsters could work off their energies without fear of breaking windows or trampling flower beds. The children also have the rear garden room as part of their domain, where they have room to play vigorously even on rainy days, and may strew toys around as they like.

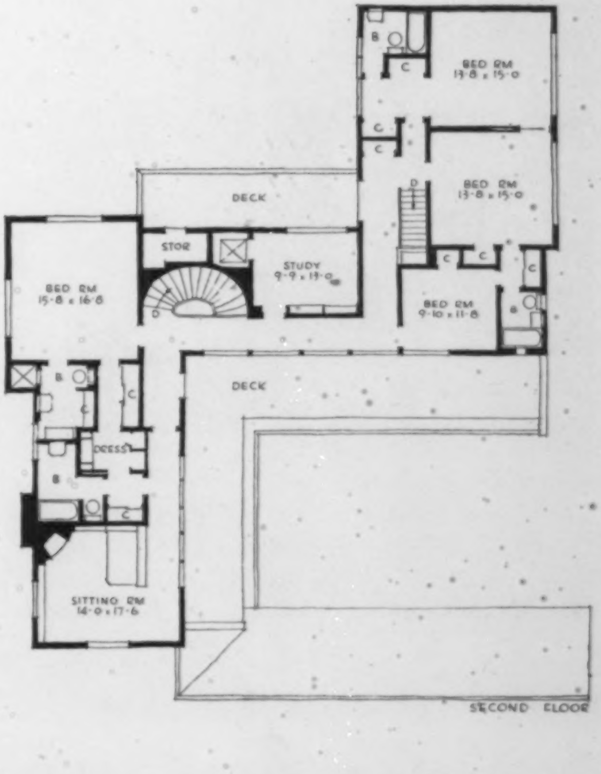




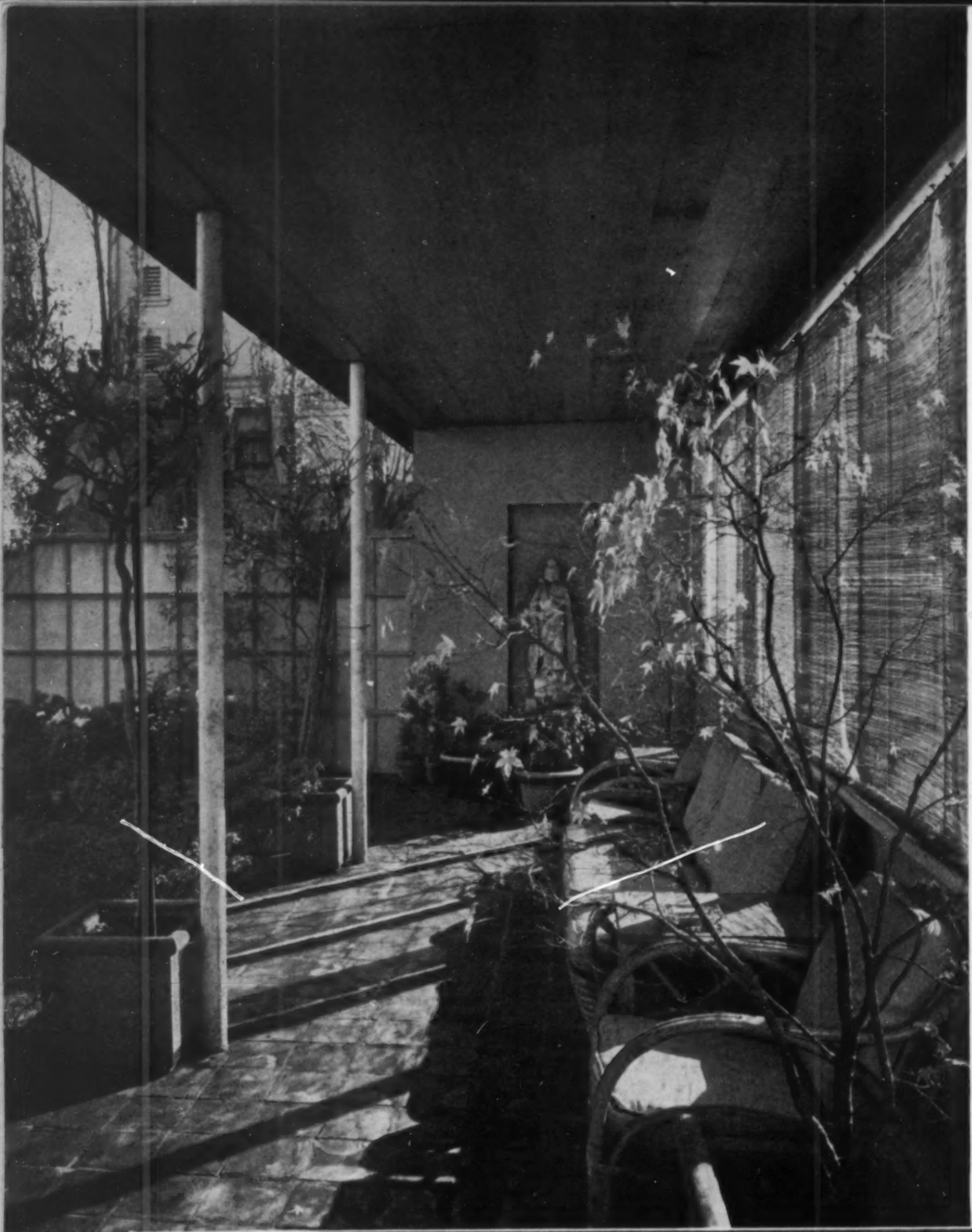
ROGER STURTEVANT Photos


B
C
MAID
10-0 x 11-6
GARDEN ROOM
SERVICE
PANTRY
BREAKFST ROOM
KITCHEN
12-6 x 15-0
C
C
C
U
D
U
LAV
DINING RM
15-6 x 19-0
C
GALLERY
LIVING RM
17-0 x 30-0
LIVING TERRACE
GARDEN ROOM

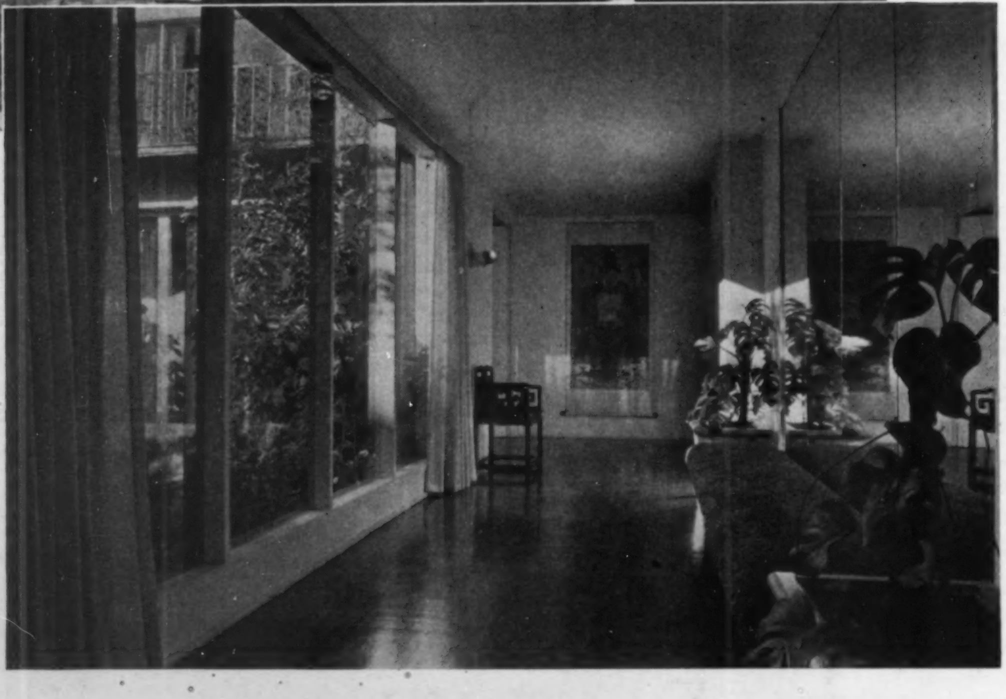
FIRST FLOOR

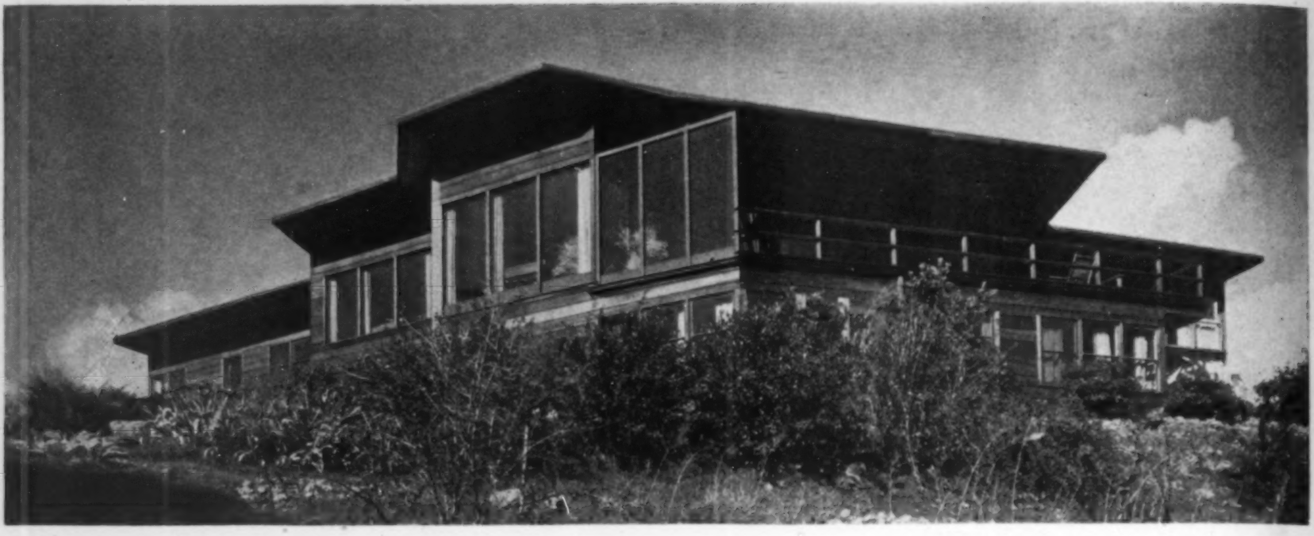

B
C
BED RM
13-8 x 15-0
C
C
DECK
D
BED RM
13-8 x 15-0
STOR
STUDY
9-9 x 19-0
BED RM
15-8 x 16-8
D
C
C
C
BED RM
9-10 x 11-8
B
B
C
C
DECK
DRESS
B
C
SITTING RM
14-0 x 17-6

SECOND FLOOR

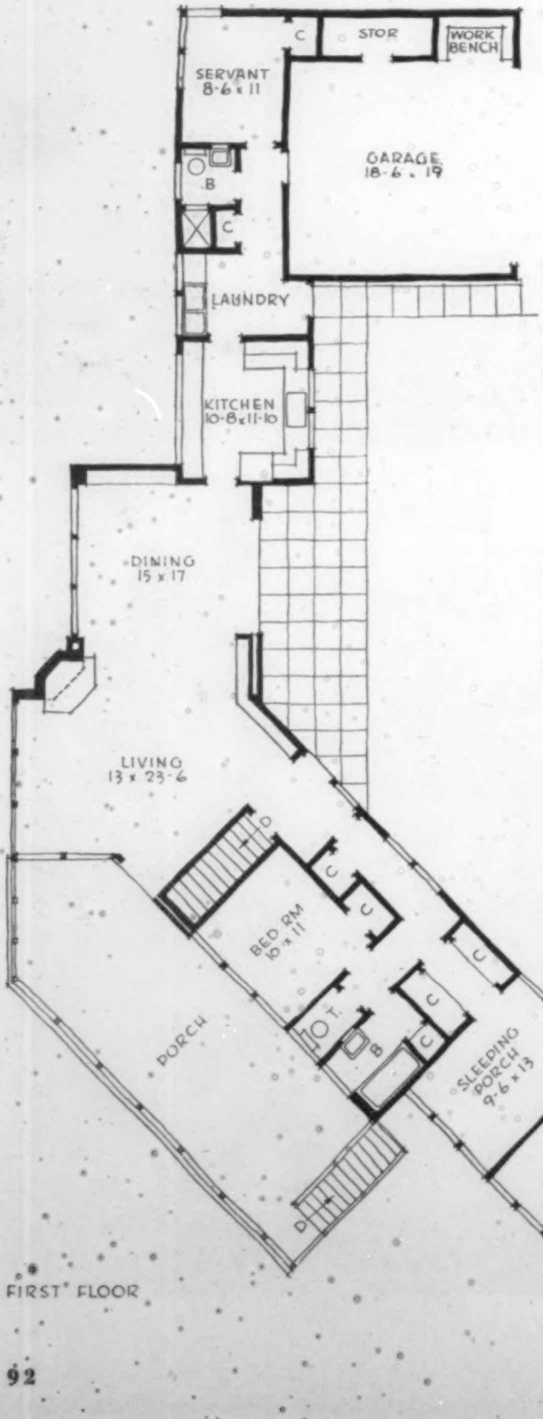


Left: Front of the house is the sheltered portion of the patio ("garden room" on plan). Left below: on opposite side of patio is the gallery from entrance past the kitchen section. Center below: view of living room facing patio. Decoration of living rooms was influenced by Mrs. Bradley's collection of Chinese Tomb figures (decorator, Beth Armstrong, of Armstrong, Carter & Kenyon). Views out the dining room windows give just a suggestion of the panoramic scenery which is always a design factor in houses near San Francisco



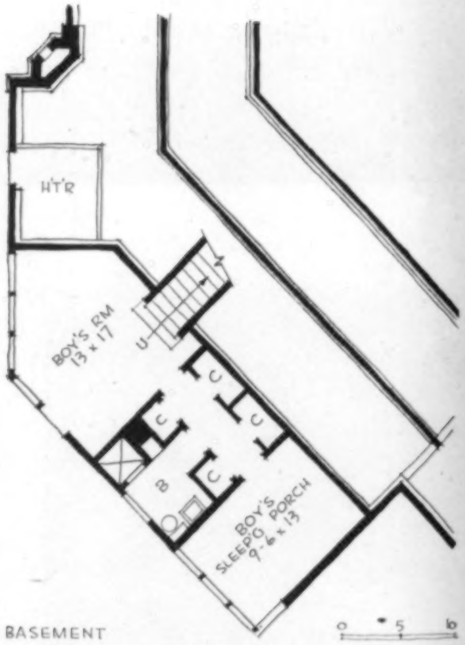


HILLTOP HOUSE TOO



C
STOR
WORK BENCH
SERVANT 8-6 x 11
GARAGE 18-6 x 19
B
C
LAUNDRY
KITCHEN 10-8 x 11-10
DINING 15 x 17
LIVING 13 x 23-6
D
C
C
BED RM 10 x 11
C
T.
B
C
C
PORCH
SLEEPING PORCH 9-6 x 13
BED RM 13 x 13-6
D

FIRST FLOOR



HT'R
BOY'S RM 13 x 17
U
C
C
C
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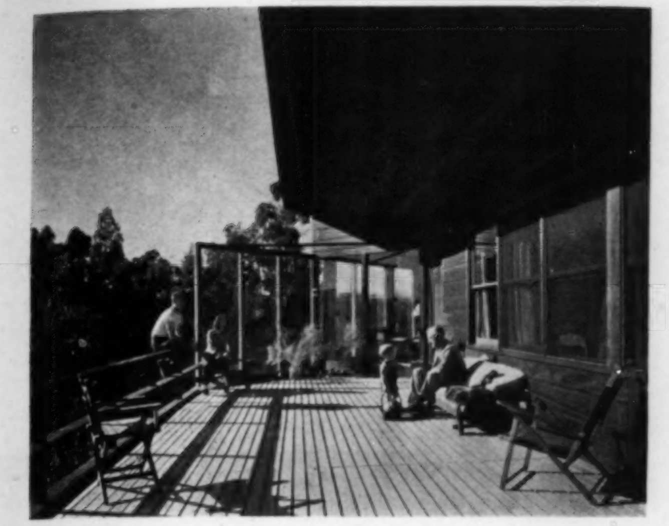
B
C
BOY'S SLEEP'G PORCH 9-6 x 13
0
5
10

BASEMENT

This completely unrestrained plan grew partly out of the nature of this hilltop site, partly from the requirements of the owner, partly from orientation considerations. It protects a sheltered garden against summer sun, invites the winter sun to warm the porch, while protecting it against the wind, and also provides an expansible house for welcoming any given assortment of grandchildren



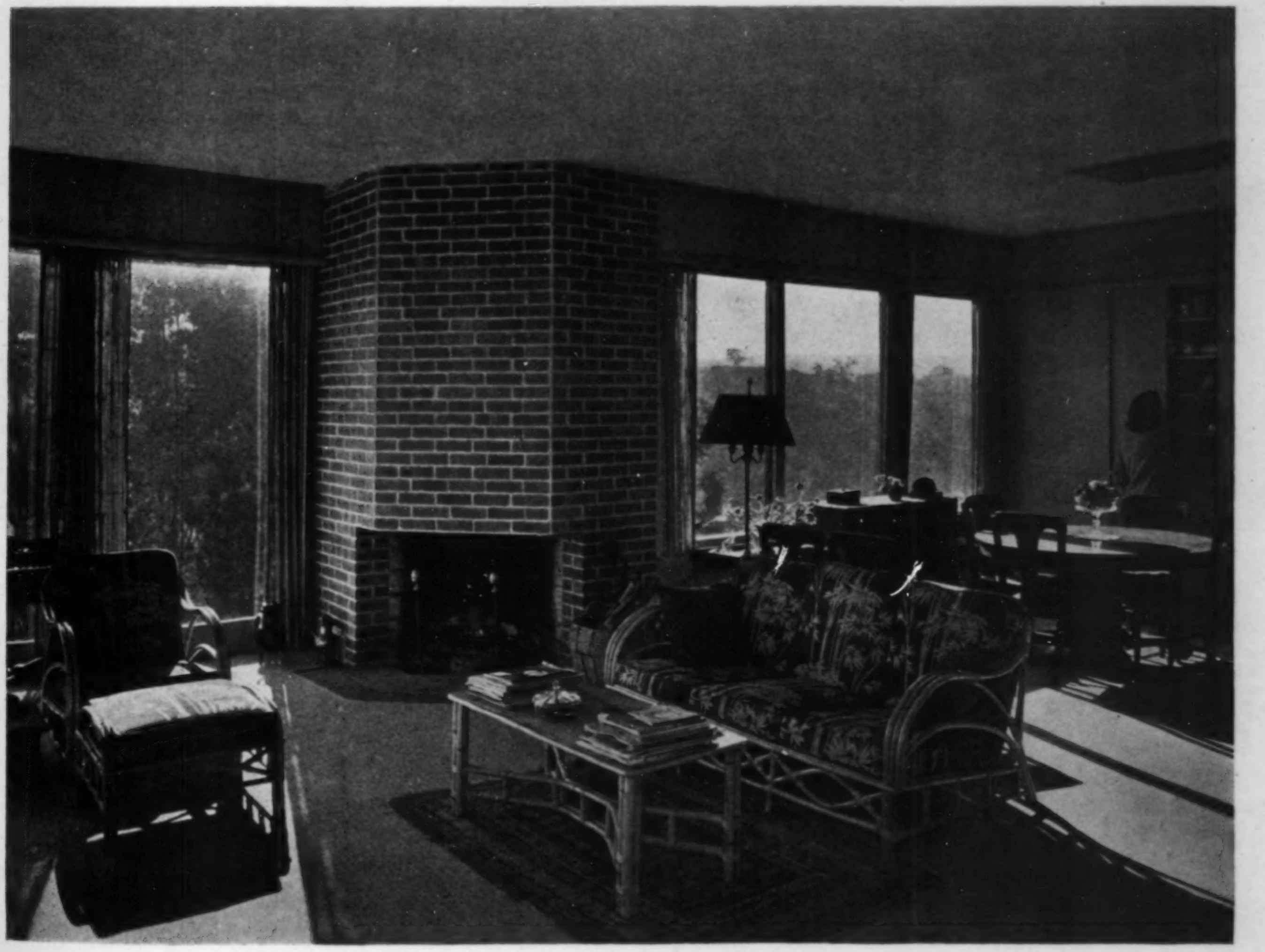
IF this house has somewhat the appearance of an outsize flying wing, there is a reason for it. And the architect was a bit reluctant about the whole thing. He was bothered by the "constant intrusion of the sky" on this sun-swept hillock. But the clients insisted, and the view of Mt. Diablo was persuasive too. The problem of glare, coupled with the desire to bring in the outdoors and the view, led to the wide up-angled overhangs and wide low construction which give the house that airplane appearance. The glare was further reduced by a dark stain on the horizontal redwood siding. There was another problem which made its contribution to the far-flung scheme of the plan. The McKibbens have four children and many grandchildren, and they anticipated the inevitable confusion of three generations together on visiting occasions. Thus the master bedroom is isolated, beyond a sleeping porch, at the end of the house. And sleeping rooms for children were tucked in under the huge porch; these extra rooms can be closed off when not in use. Sliding glass doors open the living-dining room to the sheltered front garden, which, with its northern exposure, offers cool shade in summer. On the other side the overhang permits winter sun to warm the porch, and a glass screen protects it against the wind. The porch serves as outdoor living room, especially nice for grandchildren.

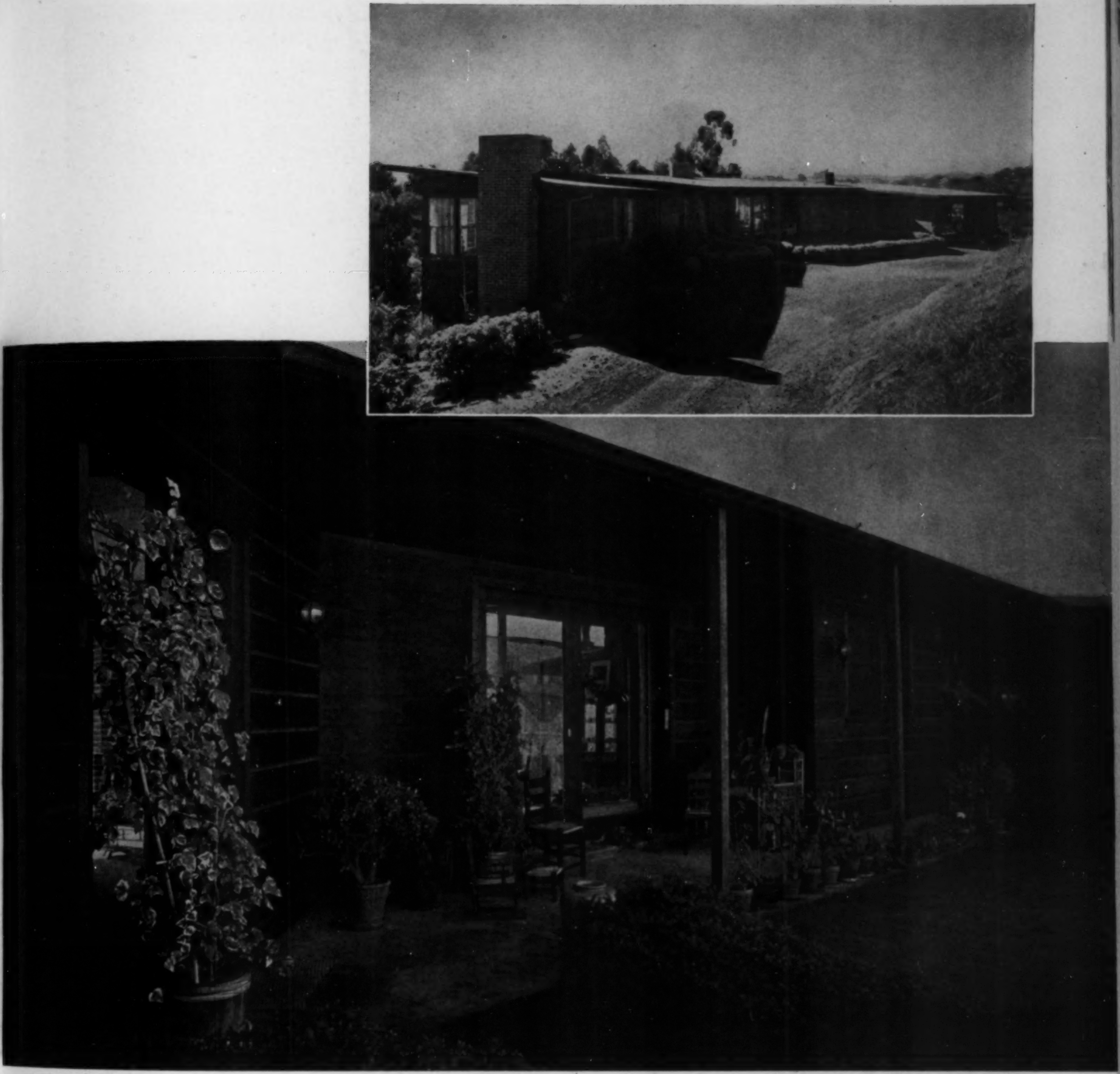
CLOSE TO THE SKY

J. Warren McKibben Residence, near San Francisco

Clarence W. W. Mayhew, Architect

ROGER STURTEVANT Photos





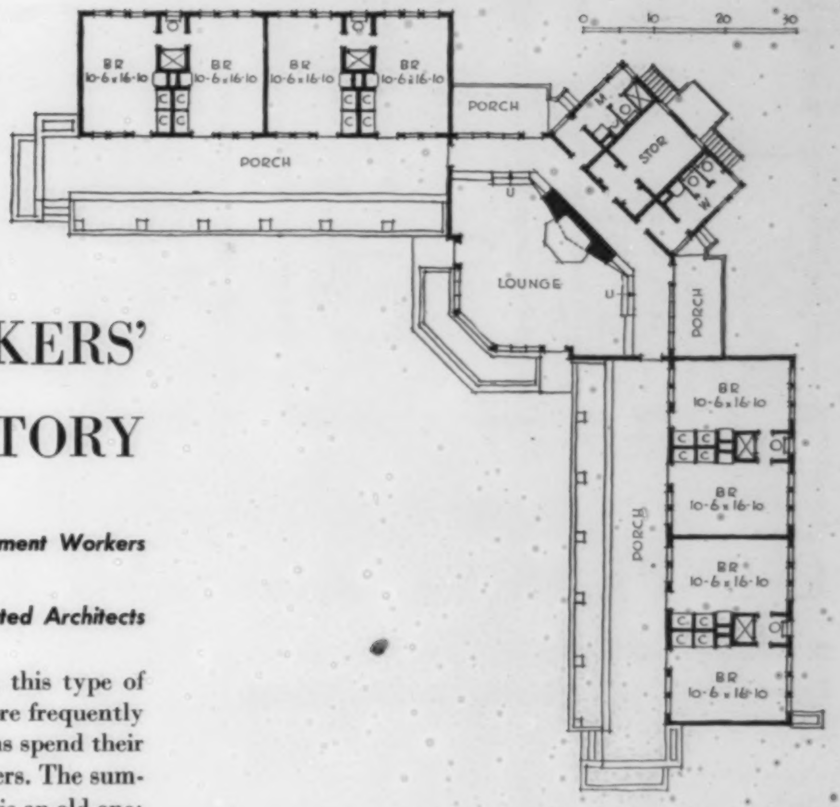
The McKibben house is designed for the informal living that goes naturally with an isolated hilltop site in Contra Costa County, Cal., where views of hills in all directions make for close communication with sun and wind and storm. So the house looks outward, not inward, and the professional decorators' wiles were strictly forbidden; indeed the furnishings represent the family's accumulation of the things that had stood the one test of comfort. An example is the curtains of vertically hung bamboo, in the living room view. The McKibbens insisted on this simple screening, but could not convince the workmen, who insisted on putting in a complicated system of rods, strings, pulleys and the whole works. Despairing of argument, they finally just watched quietly and later when the coast was clear took out all but the rod, achieving simplicity the hard way

GARMENT WORKERS' SUMMER DORMITORY

Camp Dormitory for International Ladies Garment Workers Union, Forest Park, Pa.

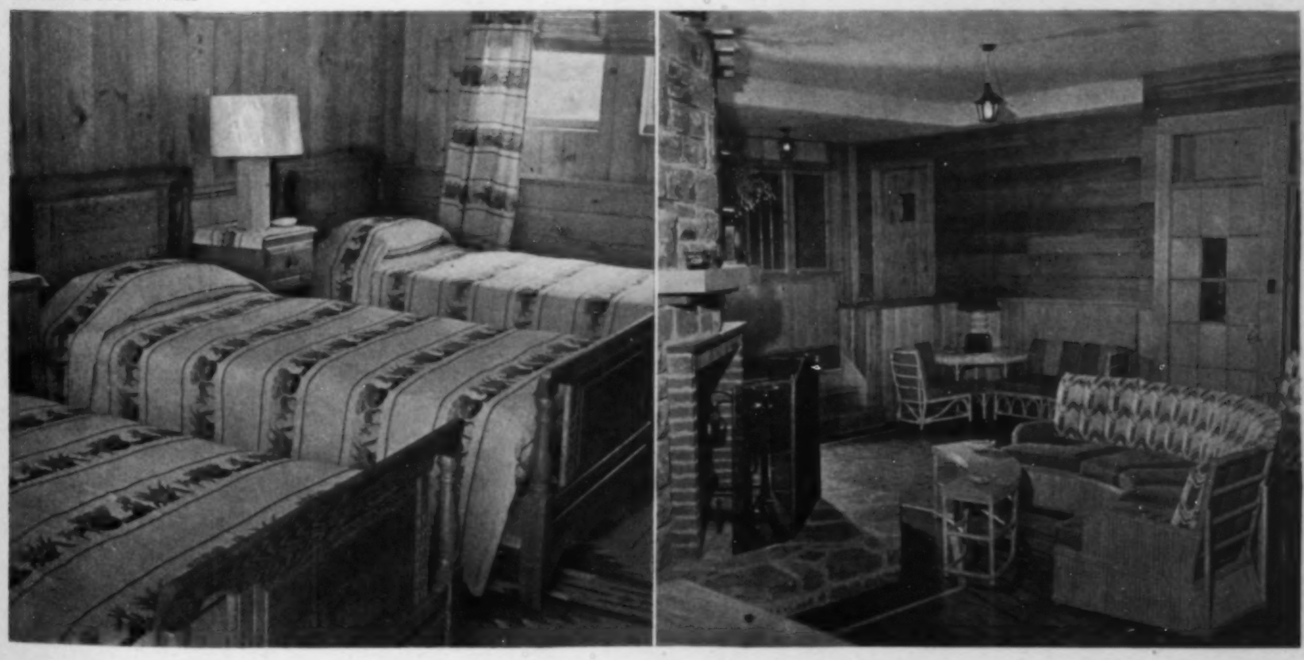
Alfred March and Robert Kliegman, Associated Architects

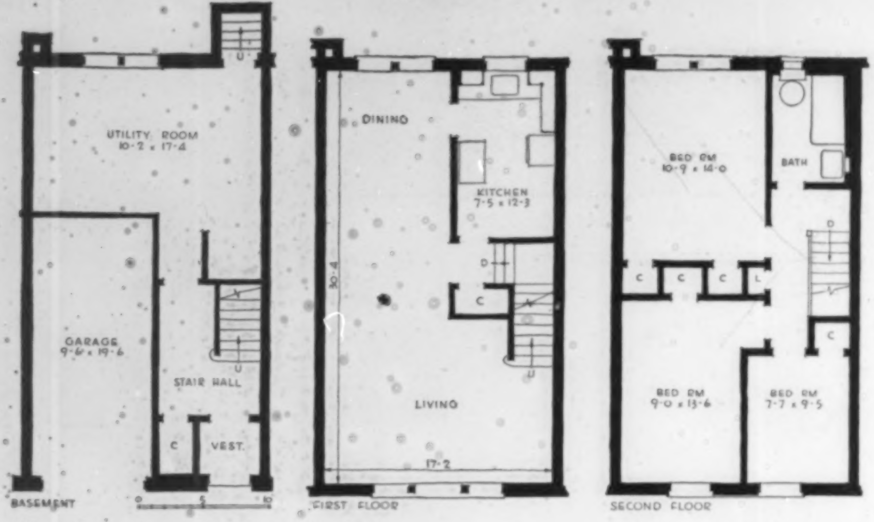
An unusual assignment a few years ago, this type of project may be expected to appear more frequently in the future as more and more labor unions spend their funds to entertain as well as to enlist workers. The summer camp of which this dormitory is a part is an old one; this project was completed just as the war closed down on building. It is strictly a dormitory; all meals are served in another building. And it runs by nature to a playfulness in design expressive of the carefree atmosphere of vacation time. The plan is open, not only for through ventilation, but also for the porch area which serves as additional get-together space. The connecting passage is carried through the lounge as a raised gallery. A solarium, well screened from surrounding grounds, was provided over the service wing.



Woodwork in the lounge is a combination of cypress and cedar. Some of the bedrooms are finished in pine, others in cedar. Bedroom windows are at high level, can be lowered in a slot below the sill to permit full opening. The wall of native stone around the porch was laid up dry around lower flower beds, with mortar at the upper porch wall. A slate coping was installed at the upper wall at a little above seat height

KATHERINE JOSEPH Photos




UTILITY ROOM
10-2 x 17-4
GARAGE
9-6 x 19-6
STAIR HALL
C
VEST.
U
BASEMENT
0
5
10
DINING
KITCHEN
7-5 x 12-3
D
C
U
30-4
LIVING
17-2
FIRST FLOOR
BED RM
10-9 x 14-0
BATH
D
C
C
C
L
C
BED RM
9-0 x 13-6
BED RM
7-7 x 9-5
SECOND FLOOR

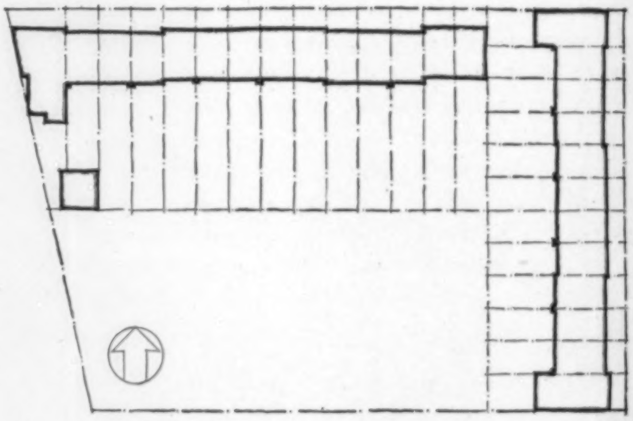
Project includes 26 dwellings for sale to veterans, built under priorities. Except for the corner lots, all are of the typical one-family plan shown. The outside corner unit is a special plan for two apartments, and the end lot has a special unit

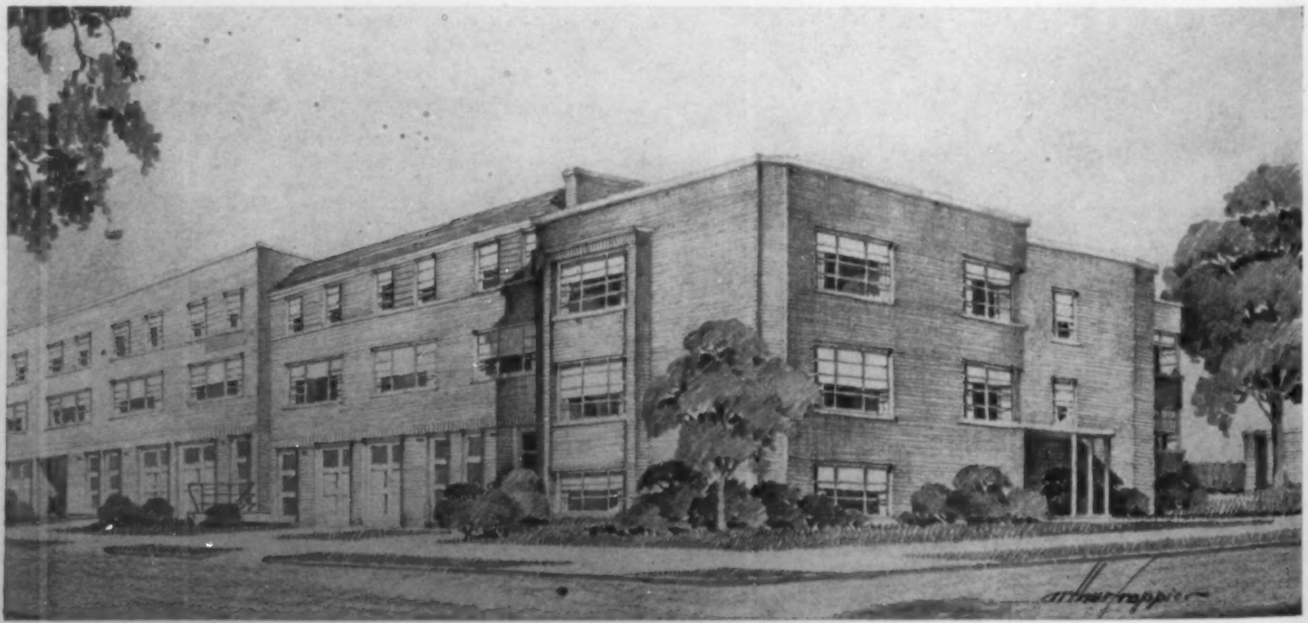
INEXPENSIVE HOUSING FOR VETERANS

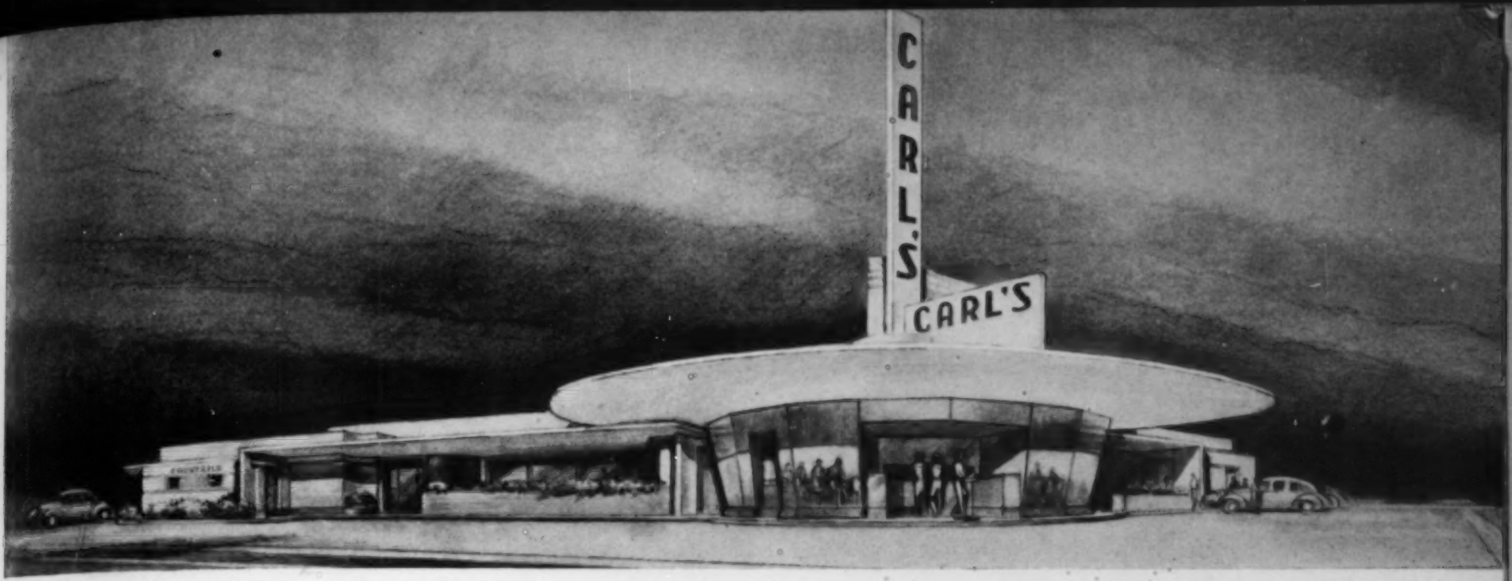
Row Housing by Oakcrest Estates, Inc., Flushing, N. Y.

Robert Kliegman and M. Sherman, Associated Architects

MAIN purpose in the design of these row houses was to produce a maximum house within existing limitations. Thus modern simplicity was stressed throughout, and all unnecessary frills eliminated. Since the existing grade of the property was higher than the street level, placement of entrances at street level obviated the need for outside stairs and allowed for more flexible and efficient plans above. The stair lands at a central point above, saving steps and keeping the living room free for the full width. A five-foot high closet separates the stair landing from the open living-dining room. This stair scheme also allows a generous vestibule and stair hall on the ground floor, and closet.




arthur frappier



DRIVE-IN RESTAURANTS AND LUNCHEONETTES

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 117. IN COLLABORATION WITH RESTAURANT MANAGEMENT

These two types of eating establishment, distinct from each other in some obvious respects, are for other important reasons in common united for joint consideration. Both depend largely for their profitable existence on transient customers, rather than upon a regular or repetitive clientele. These must be attracted by devices in addition to excellence of cookery and efficiency of service. Both, for profit on food at minimum prices, depend on fluid and frequent customer turnover—necessitating maximum efficiency in food-preparation and service layouts.

E. M. Fleischman on page 107 discusses principles in luncheonette planning. Below, Architect Harry E. Werner, on the basis of extensive experience with the type, outlines principles of drive-in planning in California, where a basic circular arrangement appears to have become a wide-spread prototype.

For the typical circular drive-in with no formal dining or cocktail room, nothing less than the equivalent of a 150 by 150-ft. corner should be chosen, as the seating capacity and gross receipts of the project are entirely governed by the number of cars that can be parked on the property. When dining and cocktail space are included, additional parking space must be provided.

The drive-in building must be designed to attract the attention of motorists and pull them in. This can be accomplished partly by maximum use of glass. The eating public feels that a crowd indicates good food. Glass reveals the crowd inside, as well as the attractiveness of the building's interior and equipment.

Illumination and illuminated advertising also help to attract the motorist. Large illuminated signs, visible and legible as far away as possible, arrest attention and give motorists an opportunity to reduce speed and get into the proper traffic lane. After they have entered the property, the illumination into which they look as they sit in their cars should be subdued and in no case shine directly in their eyes. This can best be accomplished by neon tubular lighting or by recessed spot and flood lights. If a canopy is used, neon tubing can be made a part of the design, reflecting softly against the lower side of the canopy and illuminating the building and parking space. Recessed lights under a canopy will throw the light downward and leave the canopy in darkness . . . a very unattractive effect.

If soft-colored illumination is used on the outside, stronger recessed spotlights can be used over the counter and service areas, thereby attracting the eye through the soft light to the final goal . . . the interior. Care should be used, however, to shield this strong light from the eyes of customers. Care should also be taken in the selection of neon colors, as certain colors distort the appearance of food and the ladies' make-up.

In California, most drive-in operators prefer a wide canopy. A width of 18 ft. will protect service to both front and rear car doors. It may be of cantilever construction, either wood or steel — easily adaptable to any type of construction or fire requirement.

The service walk under the canopy should be three and one-half feet wide. Wider walks will force the cars beyond the canopy; narrower walks will be obstructed by car bumpers. The walk should be raised six inches above the parking lot; over six inches makes a tiring step for the car hops; less than six inches permits cars to jump and obstruct the walk or break the glass. The parking area should slope away from the curb at the rate of ¼ in. to the foot; more induces the cars to move if brakes are not set; less does not handle drainage.

All parking areas and traffic lanes should be distinctly marked with traffic-white in order to encourage the maximum amount of parking.

Drive-ins are designed primarily for speedy service from the standpoint of both customer and owner. The more rapidly a car can be served, the more the turnover. Drive-in customers do not like to linger. To obtain this speedy service, care must be used in the selection and arrangement of equipment and fixtures, eliminating lost motion and double and triple handling.

The average car hop can handle six cars. Sufficient pick-up space should be allowed for fifty per cent of the required car hops at one time. They themselves should be able to secure all service set-ups, trays and water, obtainable from wings at each side of the pick-up counter.

All checking is done at the time food is delivered to the car hops; therefore, the cash register should be centrally located in the pick-up space.

Counter men serving the car hops should, by taking not more than three steps, be able to reach the pass port from the kitchen, coffee urns, malt mixers, fountain, and refrigerated bottle box.

Inside the port, the cooks should have at their fingertips a make-up table with refrigerated salad cabinet below, a steam table, griddle, waffle irons, deep-fat fryers, and a reach-in refrigerator.

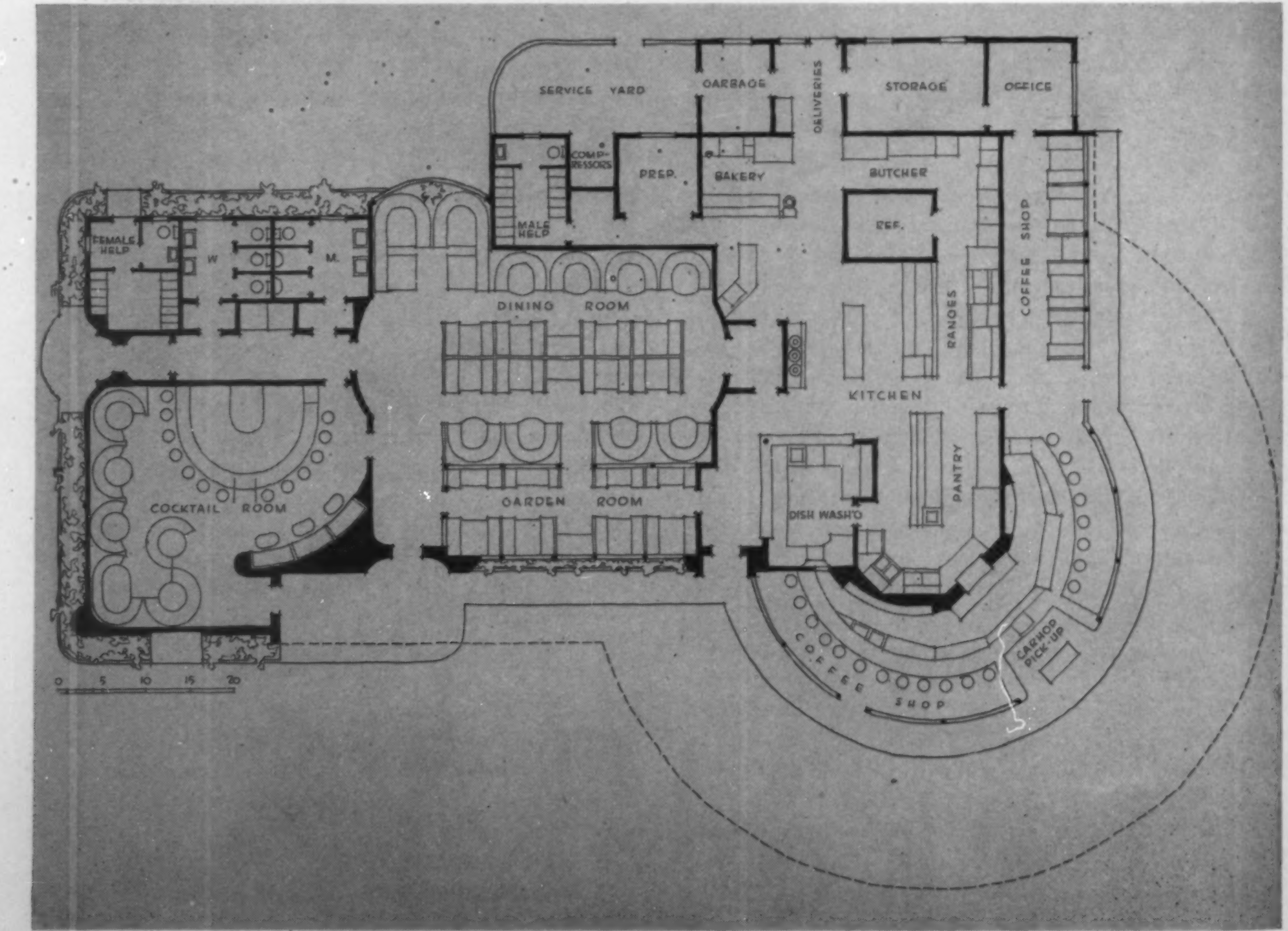
Adjacent, but not interfering, should be ample range space, baker's table and bake ovens, sinks and preparation space.

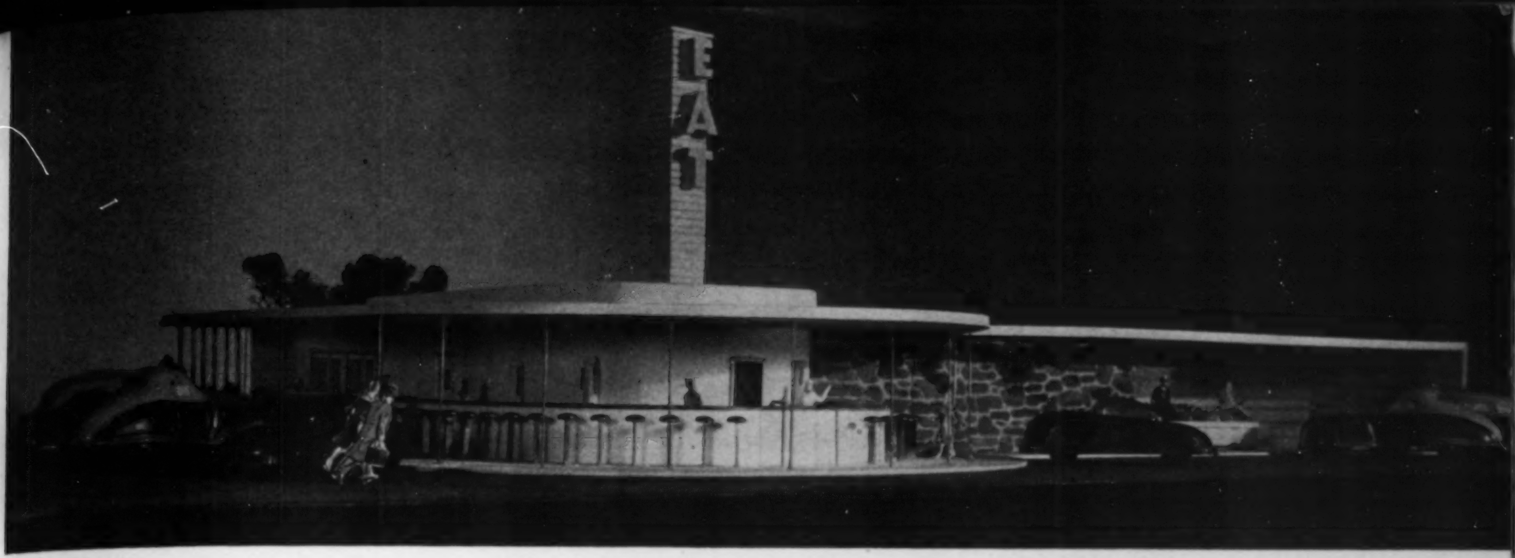
Too much emphasis cannot be placed on the dishwashing compartment. Regardless of the efficiency of kitchen, counter service and car hops, all can be bottlenecked if there are not sufficient clean dishes, glasses and silverware.

This compartment should be located so as to be accessible to car hops from the outside through an automatic pass door, to the inside counter service, and to the kitchen. It is well to conceal this compartment from the public as it is impossible to keep it as clean in appearance as the balance of the building.

When a dining room is included, this area must also have easy access to the dishwashing compartment. The preparation ranges, sinks and baking table can also serve this room. Additional pantry space, steam table, refrigerators, coffee urns, etc., should be provided. Where possible the layout should be such that during quiet hours one cook can handle the entire kitchen.

Below (see also frontispiece, preceding page): Carl's Drive-In Restaurant, Los Angeles; Harry E. Werner, Architect. On a plot 218 by 355 ft., this drive-in offers dining, garden and cocktail rooms in addition to the typical basic circular car and counter services

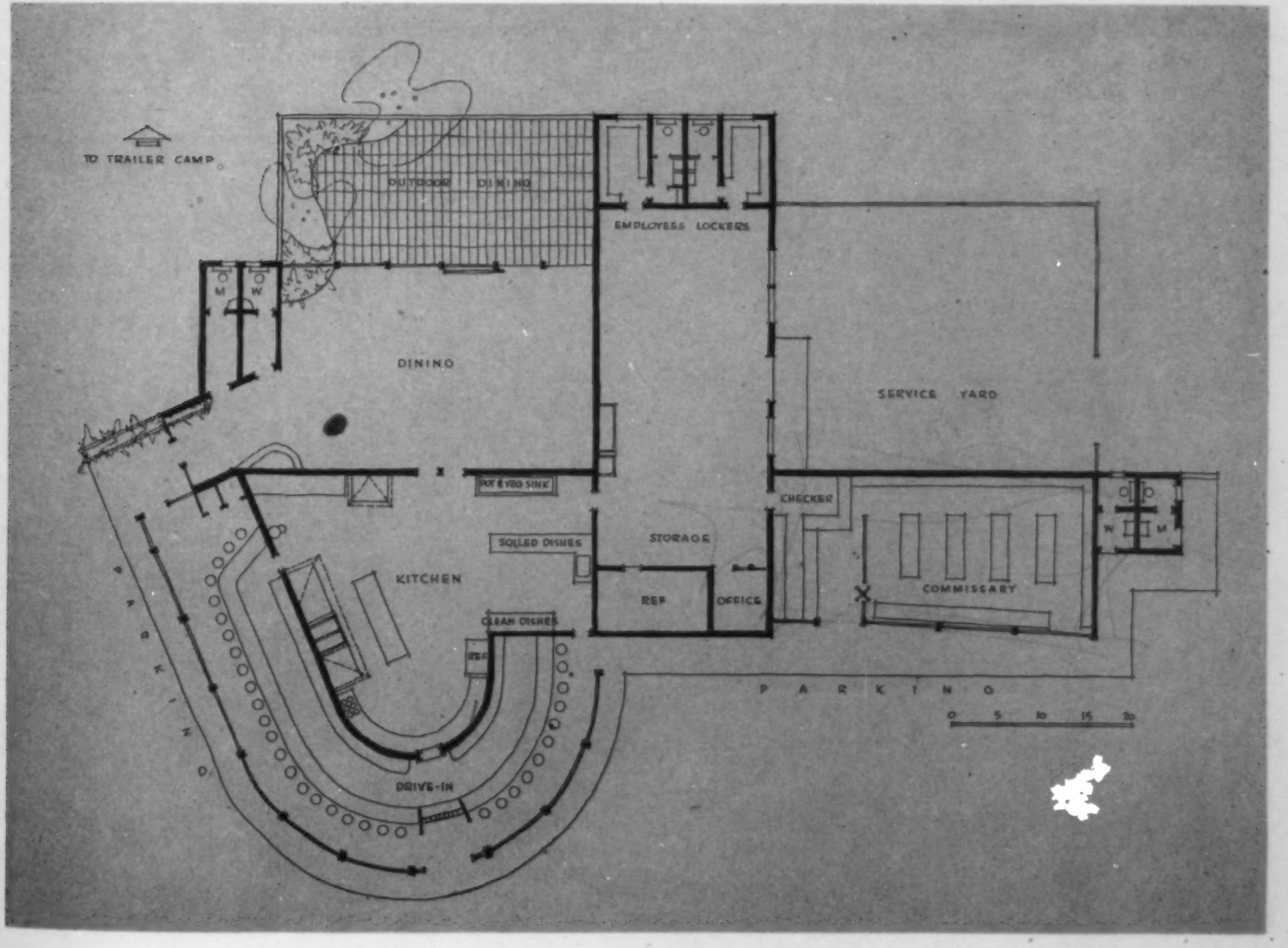


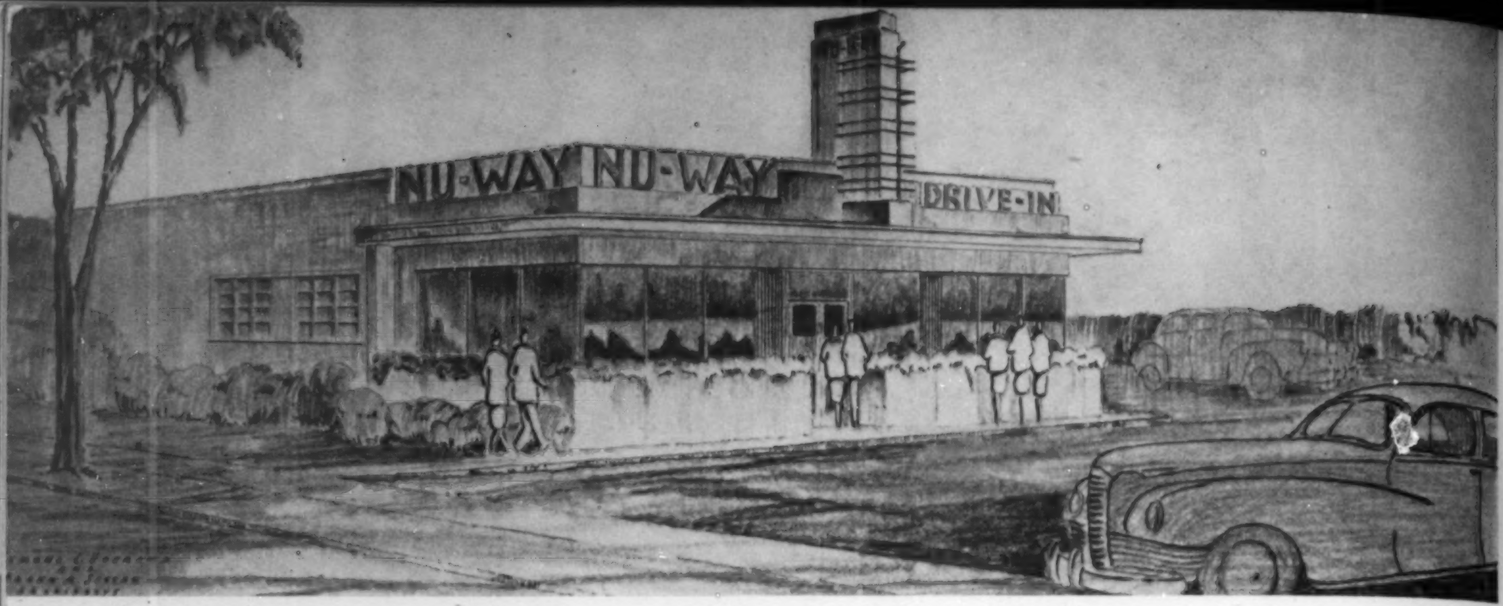


CIRCULAR DRIVE-IN INCLUDES COMMISSARY

CONFIRMATION of many Werner principles are evident in this plan by another architect for a drive-in at Van Nuys, Calif. Employing an almost identical arrangement of car-hop facilities, he has also similarly achieved a convenient placement of the dishwashing area, equally for car, counter and dining-room servers. Differing regard for local climatic tradition has, perhaps, in this case produced a reduction in the dimensions of the canopy. Also this architect, in place of a cocktail lounge, chooses to include a commissary. Construction will be wood frame and stucco, with portions of stone veneer.

Louis Shoall Miller, Architect

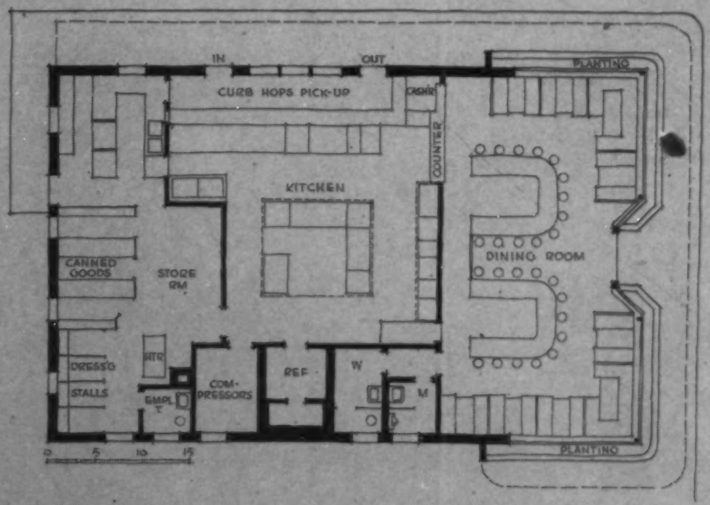

TO TRAILER CAMP
OUTDOOR DINING
EMPLOYEES LOCKERS
M
W
DINING
SERVICE YARD
POT & VEG SINK
CHECKER
SOILED DISHES
STORAGE
W
M
KITCHEN
REF
OFFICE
COMMISSARY
CLEAN DISHES
REF
PARKING
PARKING
0 5 10 15 20
DRIVE-IN

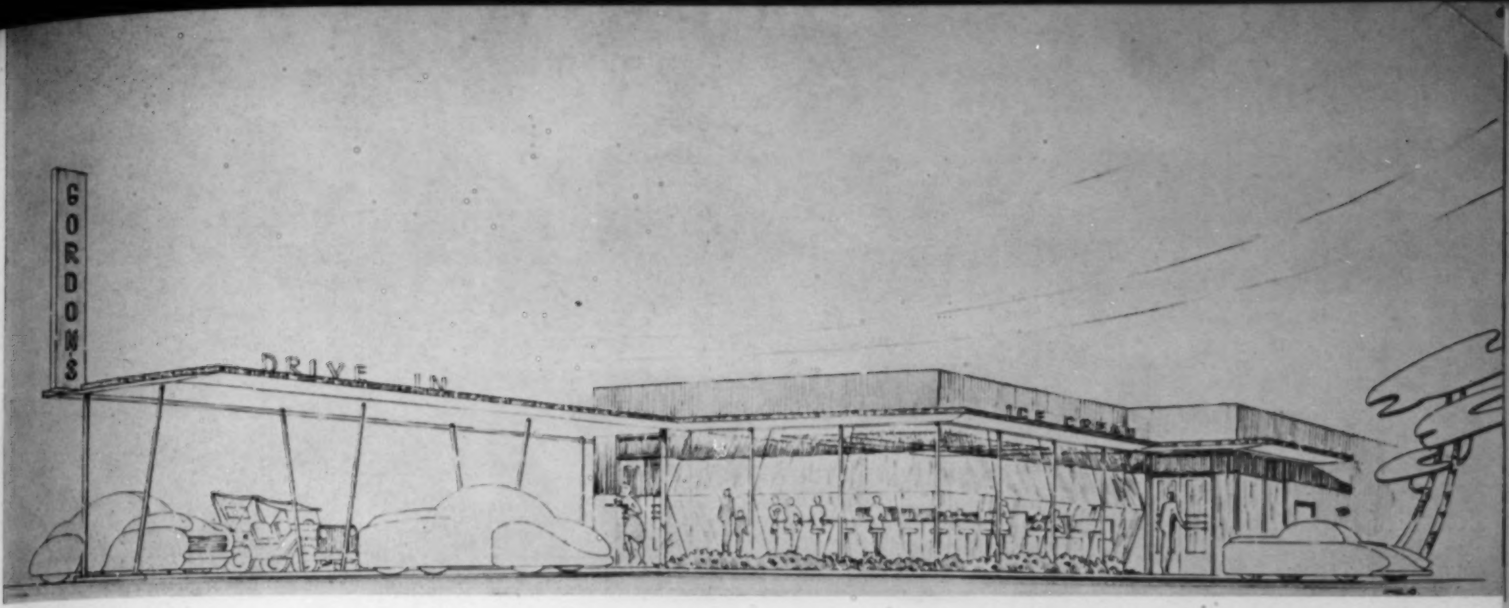

NU-WAY
NU-WAY
DRIVE-IN

RECTANGULAR PLAN SEPARATES SERVICES

Raymond L. Voskamp and Frank R. Slezak, Architects

THIS rectangular Kansas City version, in common with the California prototype, shows free and effective use of plate glass; follows similar canons in lighting, with neon tubing on the display tower, fixtures reflecting on the underside of the canopy and semi-indirect interior illumination drawing attention into the dining room. The plan, however, almost completely separates car-hop and counter services. Cashier's location, convenient for car hops, is less so for booth and counter servers. Position of dishwashing area (upper left in plan), handy for car hops, requires long-distance bussing of dining-room dishes. Construction is concrete block; light buff stucco outside; plastered inside and painted.

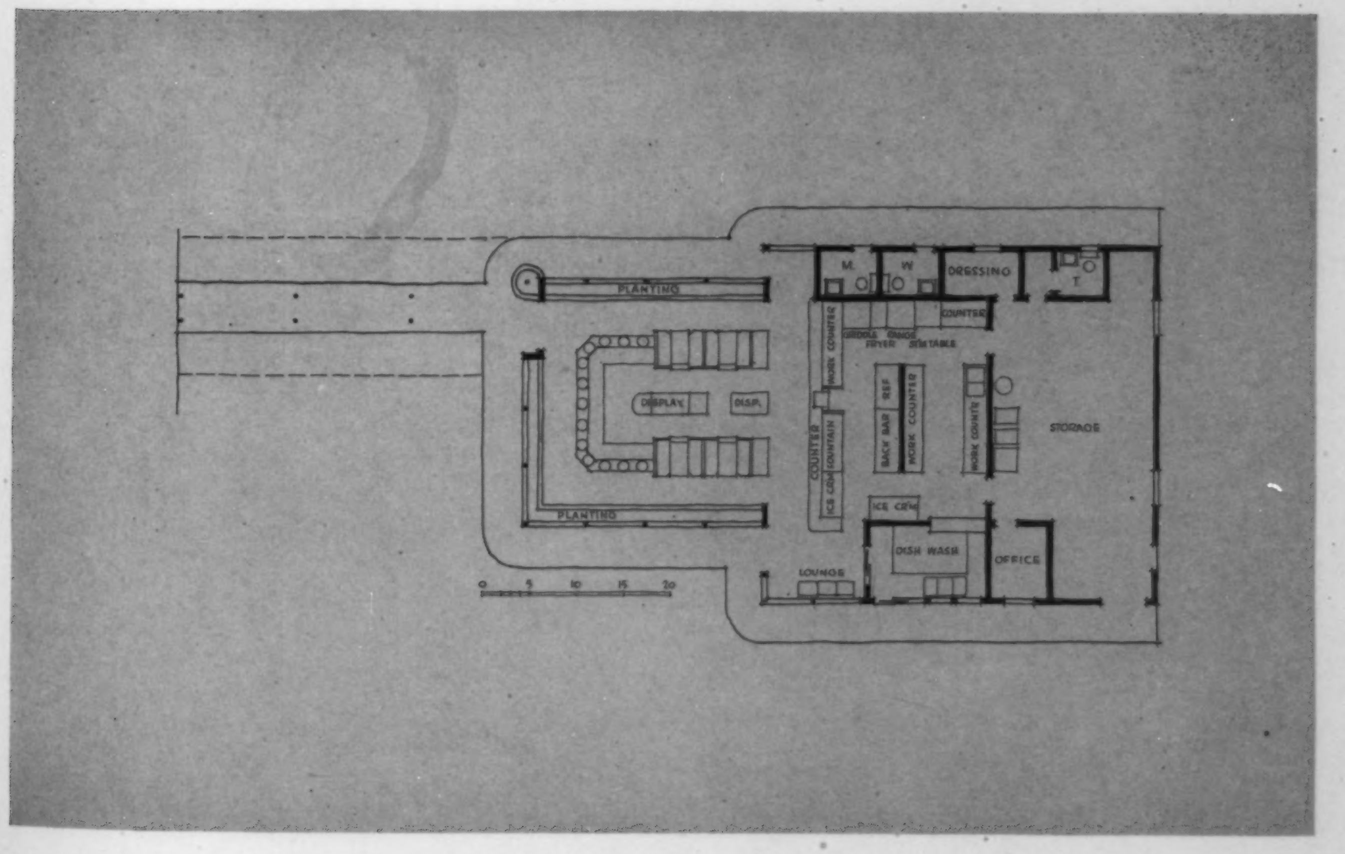

IN
OUT
CURB HOPS PICK-UP
CASHR
COUNTER
KITCHEN
PLANTING
DINING ROOM
CANNED GOODS
STORE RM
DRESS'G
STALLS
HTR
EMPL T
COM-PRESSORS
REF
W
M
PLANTING
0
5
10
15

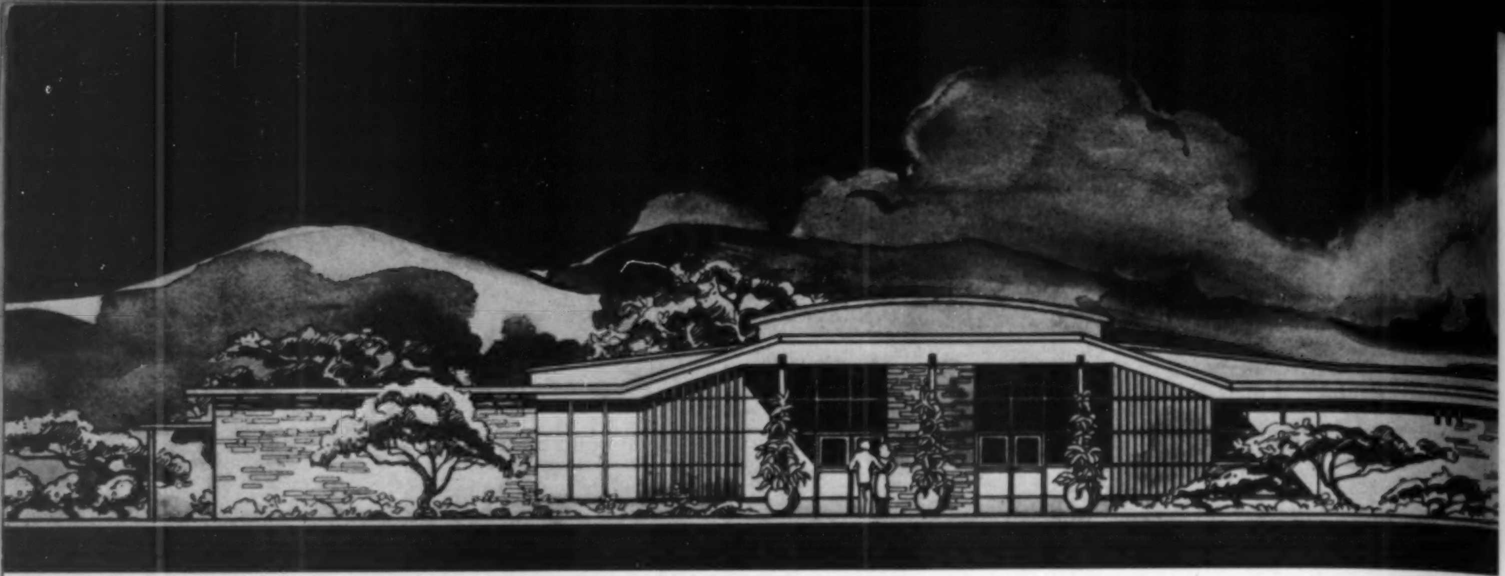

GORDONS
DRIVE IN
ICE CREA

RECTANGULAR DRIVE-IN WITH NON-GLARE FRONT

DEPARTURES from the circular prototype occur also in California. Sheets of plate glass in this one at Richmond are canted out from top and bottom, supported at meeting point by 2½-in. pipe columns. Flat roof is water covered. Plan permits both booth and counter service from inside "horseshoe." Curb service is from the general counter rather than a special pick-up center. Dishwashing area is convenient by pass port to car hops; is relatively so, also, to booth and counter area. Cashier's location between fountain and work counter in plan is more favorable to counter servers, less to car hops. Construction is wood frame; exterior surfaces, cement plaster; interior, plaster on gypsum lath.

Hardison, Rhoda & Moist, Architects

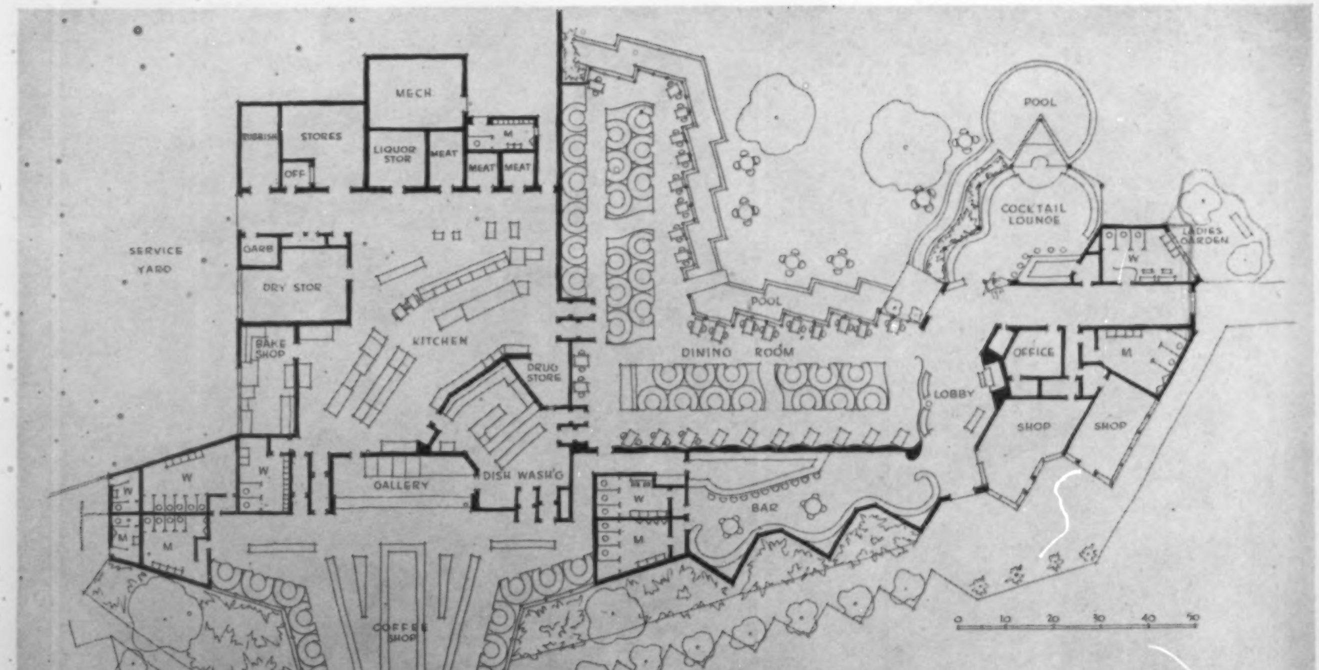

M.
W
DRESSING
T
PLANTING
COUNTER
GRIDDLE RANGE
FRYER STM TABLE
WORK COUNTER
DISPLAY
DISP.
REF
BACK BAR
WORK COUNTER
WORK COUNTER
STORAGE
COUNTER
FOUNTAIN
ICE CR'M
ICE CR'M
PLANTING
DISH WASH
OFFICE
LOUNGE
0 5 10 15 20

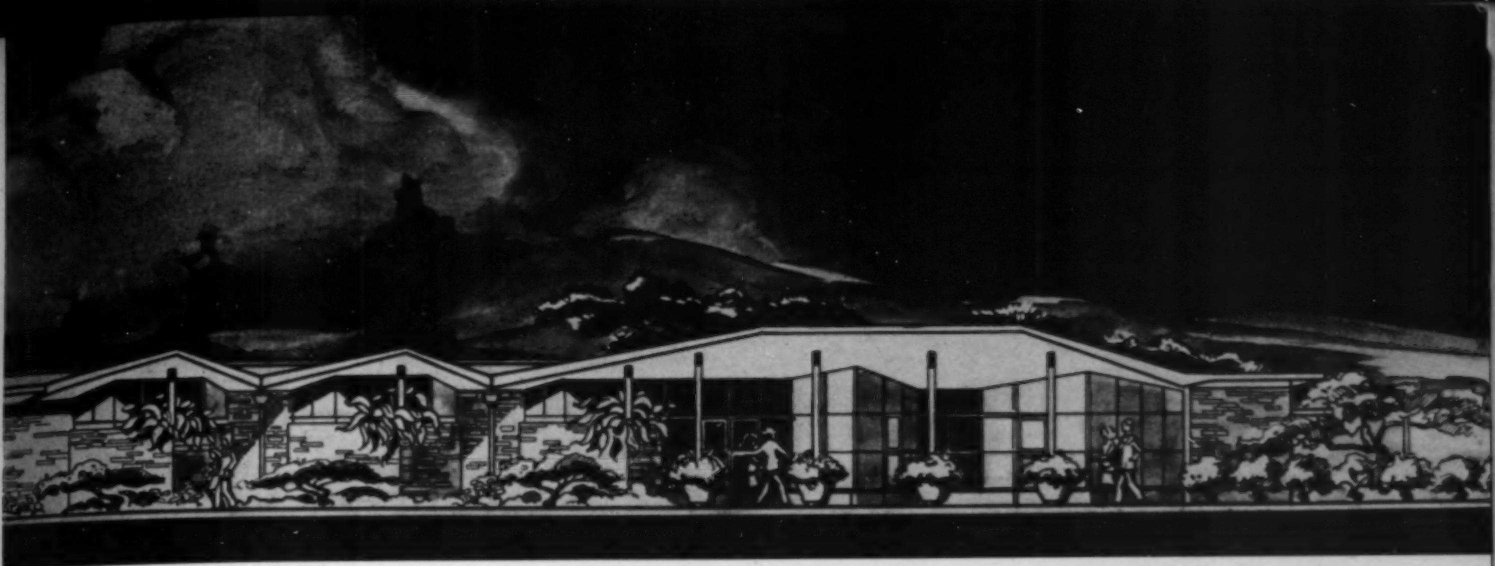


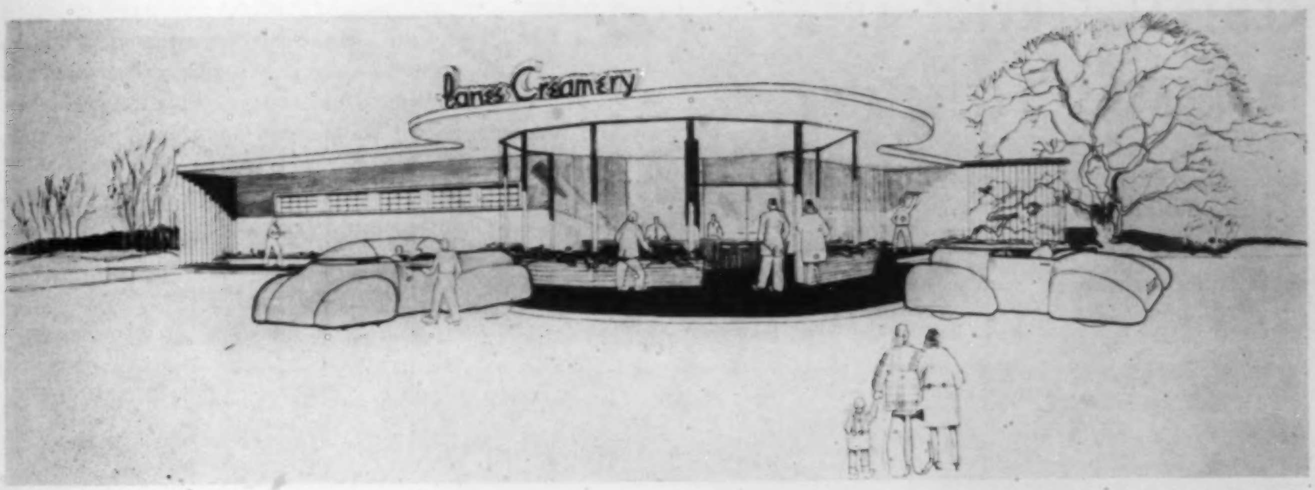
COLOSSAL DRIVE-IN FOR SUPER SCENERY

Robert Stanton, Architect

LOCATION of this proposed drive-in will be on the main four-lane highway between San Francisco and Los Angeles, "in a small valley rich in citrus ranches and surrounded by mountains." It is to be the initial building in a group eventually to include a central hotel building, cottages and shops. Construction will be of local stone, with steel frame roof and pipe columns to withstand earthquake stresses. Interiors will be treated wood and colored plaster. Large areas of glass will permit close association between inside and garden dining spaces; a water course at the level of the patio will be circulated by pumps and stocked with tropical fish.


MECH
RUBBISH
STORES
OFF
LIQUOR STOR
MEAT
M
MEAT
MEAT
SERVICE YARD
GARB
DRY STOR
KITCHEN
BAKE SHOP
DRUG STORE
W
W
W
M
M
GALLERY
DISH WASH'G
W
M
COFFEE SHOP
CASHIER
PARKING
POOL
COCKTAIL LOUNGE
LADIES GARDEN
W
POOL
DINING ROOM
LOBBY
OFFICE
M
SHOP
SHOP
BAR
PARKING
0
10
20
30
40
50

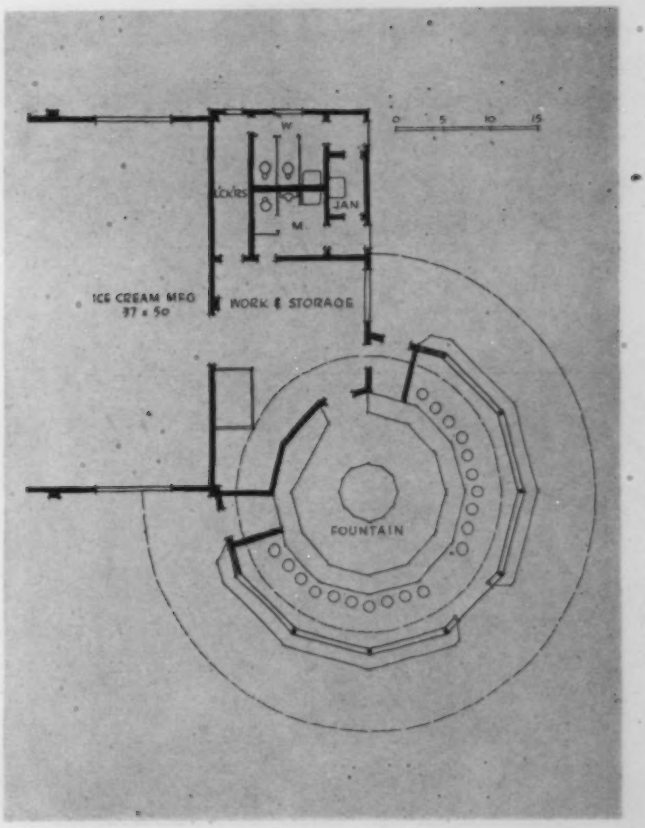



Lane's Creamery

DRIVE-IN OUTLET FOR ICE-CREAM

Lawrence Gentry, Architect

Returning for a moment to circular orthodoxy, this project now under construction at Mountain View, Calif., combines the processes of ice-cream manufacturing with the principles of drive-in distribution. Construction is wood frame; steel roof framing over the fountain. Exterior wall surfaces are stucco with brushed texture; interior walls are of hardwood plyboard. Compressor and other heavy machinery are in the basement.


0 5 10 15
W
LCKRS
M.
JAN
ICE CREAM MFG
37 x 50
WORK & STORAGE
FOUNTAIN

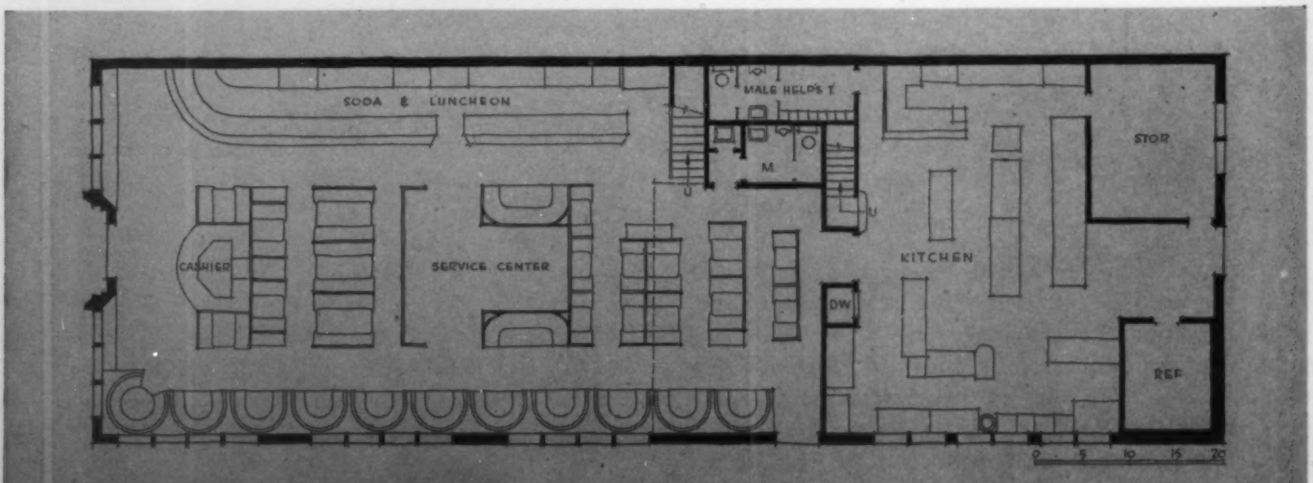
GENE LYLE Photo

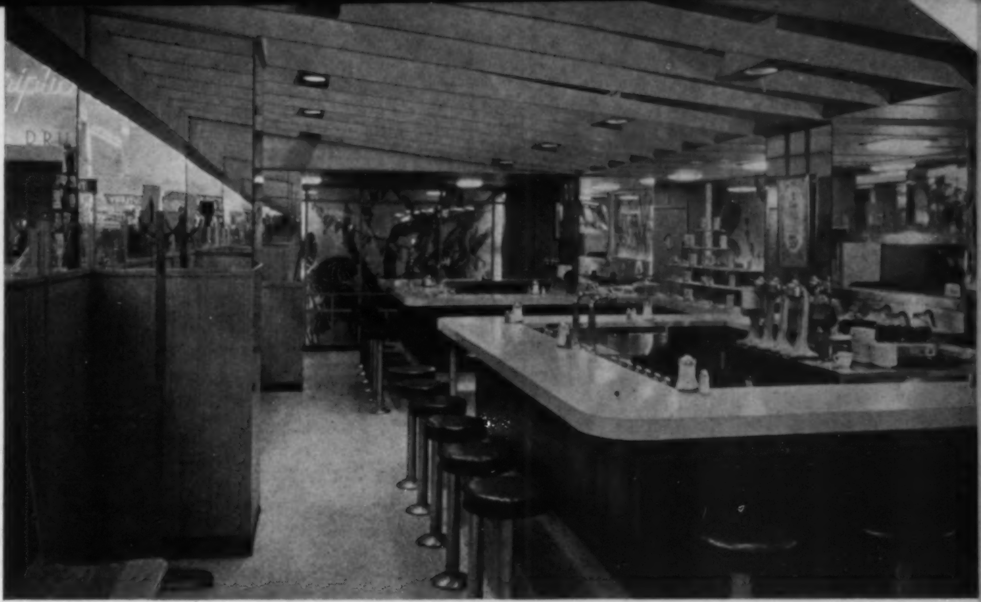
CENTRAL SERVICE AREA INCREASES EFFICIENCY

Frank L. Hope, Architect

LOCATION, size and parking features retain this example, at San Diego, Calif., in the drive-in category, although many characteristics make it a logical cross-over into discussion of the luncheonette type. Position of cashier and arrangement of booths and counter in relation to preparation and service areas imply many of the principles of luncheonette planning outlined on pages 107 to 109. Loose relationship between kitchen, booth and counter areas, not endorsed by Mr. Fleischman, is offset by provision of the service center.

Chadwick's
DINING


SODA & LUNCHEON
MALE HELP'S T.
M
U
U
CASHIER
SERVICE CENTER
DW
KITCHEN
STOR
REF
0 5 10 15 20



Soda-luncheonette in the Owl Drug Store, Hollywood and Vine, Los Angeles. Floor, step and base of counter are pale grey, white and small amount of red terrazzo. Counter top is beige; front, gun metal; stools, red. Rafters and walls are darker beige. Soiled-dish conveyor moves along entire length of counter, concealed from customer. Alyne Whalen, Designer; Fred L. Schmid, Vice President, United Rexall Drug Co., in charge of layouts

PLANNING THE MODERN LUNCHEONETTE

By E. M. Fleischman *

LUNCHEONETTE design is preponderantly a question of adapting layouts and architectural treatment to limitations of space within existing structures. The first architectural requirement is an inviting entrance — attracting patronage and allowing free flow of traffic in both directions. A dark and uninviting entrance, jammed with people in confusion, does not promise the prospective patron anything but an inefficient and not very pleasant atmosphere for the taking of food and refreshment.

Counter Seats vs. Tables

If the operation is to be small or medium sized and the location is a busy one, counter seats should predominate in the layout — in fact, they are best for the entire operation. The turn-over will be much faster; the cost of operation much less than with tables.

If the luncheonette is large and the location busy — counter seats still should predominate and be placed nearest the entrances. The balance of the available space may then be devoted to tables or booths, or both. In this case care must be taken to provide space at the counter for the servers of tables and booths, as well as easy access to the kitchen.

People like to sit at counters for many reasons. As against sitting at a table awaiting server, and then food, a patron at the counter has much closer contact with coumterman or girl. He can see various food items at close view instead of picturing them from a menu. He can change his mind without being a nuisance, by calling out to the counterman to leave out this or add that. He can quickly secure condiments or extra cream, butter, bread or water.

If the operator desires tables to invite "off-hour" business, or for dinner, it is wiser to use two seaters placed a few inches apart. When demand arises for three or four in a party, two tables are simply pushed together.

Booths waste more space than all other systems. They are also the slowest in turn-over and the most difficult to serve properly. Also, four-seater booths tend more than tables to be occupied by only two patrons; 50 per cent of capacity is wasted.

If the location is in a home or suburban section, booths or tables may be an incentive for some customers. But care must be taken in their arrangement. There are four good ways to use the space along the two long walls: as aisles for free circulation of customers and waitresses; for two-seater booths; for two-seater tables; for four-seater tables placed with one point of table near wall, allowing the four chairs to be placed so that they do not obstruct the aisle, also permitting each place to be served easily. Tables or booths, open at both ends, may be used in the balance of the space available. A popular system is two-seater booths next to each other with a 4-ft. partition along the center line.

Types of Layout

The first and simplest form of luncheonette consists of a counter with fixed stools, the length of counter determined by the over-all interior dimensions, and the amount of space required for the kitchen and other facilities. If the existing space is wide enough for kitchen and washrooms to be placed behind the counter, practically the entire length can then be utilized for the counter. In such case a central entrance to the kitchen from behind the counter is desirable. Preferred is a central entrance from behind counter and a rear entrance for deliveries. If only a central entrance is used from behind the counter, make the aisle in rear and the aisle space behind the counter wider to allow for deliveries, removal of garbage, etc. without confusion.

If the space is not wide enough for kitchen behind the counter, space must be cut off from the rear. One quarter of the length of the space as a minimum should be used for the kitchen if basement, mezzanine or upper floor is available, and one third or more if not.

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* Vice President of A. Schulte, Inc. Treasurer and Vice President of N. Y. State Restaurant Assn. Former Director of National Restaurant Assn. This article is essentially a digest of the chapters on design and planning from the author's forthcoming book, "Modern Luncheonette and Restaurant."

It is good business to have washrooms for customers. When cutting off rear part of space for the kitchen, it is advisable to use the section cut off opposite the counter side for washrooms.

In some places where ground floor space is limited, customers' washrooms may be placed on mezzanines, other floors, or in the basement.

If the space is shaped like an L with one part long and the other short, the rear part is, as a rule, the short end of the L. In such a case this section will make an ideal kitchen space. In a T shaped space, the long part will be the counter, one upper side of the T will be the kitchen and the other upper side of the T may be men's and women's washrooms.

To determine on which side of a luncheonette to have the counter is important. Here is a fairly good rule to follow for "inside the block" locations: People keep to the right on most sidewalks. Therefore, the counter should be placed to the left side looking in. The entrance should be in the center, or on the right side looking in. If planning for a corner location, place counter on opposite wall from entrance, so that it may be seen from the street.

If enough space is available, two doors into the kitchen are preferable. One "In" and one "Out" door prevent accidents and speed up traffic. If the kitchen is behind the counter, openings should be provided counter high for passing out hot dishes and salads, clean dishes, glasses and silverware; and below counter height for passing in trays of soiled dishes. These aids cut down walking, carrying of trays, and will speed up service.

A popular type of layout is a U-shaped counter, either in single or multiple form — two, three, or more sections, joined together to form one large unit. These are favored greatly by chain and department stores, because of space economy and ease of operation.

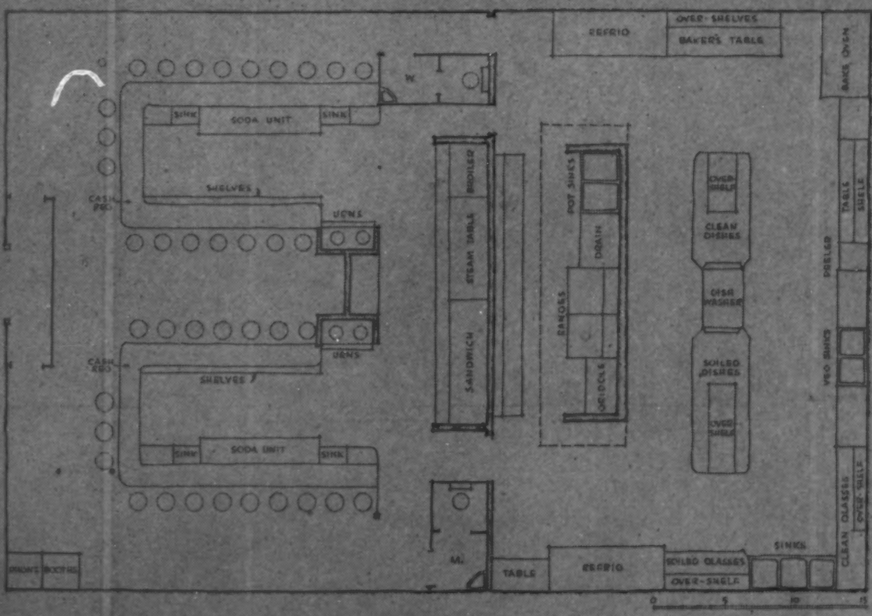
The bays may be only 8 to 10 stools each or they may run as high as 30 and 40 stools. The usual layout for small seating capacity bays is to have the equipment placed at the point where two bays meet in rear. The equipment is placed across the meeting point of bays facing the rear of the store.

If bays are large and counters tall enough to carry the equipment, the layout is the same along one side as for a straight counter. Along the other side there is shelving for dishes, pies, napkins, etc. If bays are low, serving equipment must be placed at the point of meeting of the bays or against the rear wall.

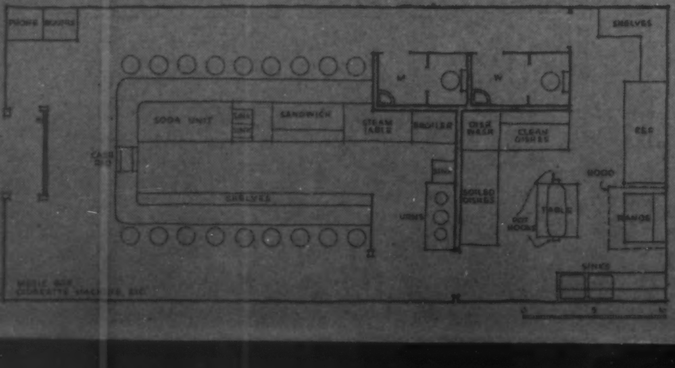
Quite often these multi-counter operations are combined with additional tables or booths, in which case service is supplied from the same serving stations, sometimes reinforced by service from the kitchen proper.

Stools and Counters

The spacing of stools is determined primarily by whether or not they have backs. With backs, more space is


REFRIG
OVER-SHELVES
BAKER'S TABLE
BAKE OVEN
W
SINK
SODA UNIT
SINK
SHELVES
CASH REG
URNS
BROILER
STEAM TABLE
SANDWICH
POT SINKS
DRAIN
RANGES
GRIDDLE
OVER-SHELF
CLEAN DISHES
DISH WASHER
SOILED DISHES
OVER-SHELF
TABLE SHELF
PEELER
VEG SINKS
URNS
CASH REG
SHELVES
SINK
SODA UNIT
SINK
M
PHONE BOOTHS
TABLE
REFRIG
SOILED GLASSES
OVER-SHELF
SINKS
CLEAN GLASSES
OVER-SHELF
0
5
10
15

Basic counter types and equipment requirements: Type A (below), straight counter with kitchen behind, shows kinds and layout of equipment required for efficient typical luncheonette service of 18 stools or less. For 18–24, same equipment should be spaced out. For 24–30, duplicate soda unit at other end of counter; increase size of other units. For over 30, place larger soda unit in center; duplicate other units for 18 stools on both flanks. Type B (below, left), U-shaped counter with kitchen behind, 18 stools. Increase of stools up to 30 may be accomplished with increase and rearrangement of equipment similar to that for straight counter. Stools in excess of 30 are usually best accommodated by an arrangement of multiple U-shaped units, using Type C (left) as a basis for layouts


PHONE BOOTHS
SHELVES
M
W
SODA UNIT
SANDWICH
STEAM TABLE
BROILER
DISH WASH
CLEAN DISHES
REF
CASH REG
SHELVES
URNS
SOILED DISHES
POT SINKS
TABLE
HOOD
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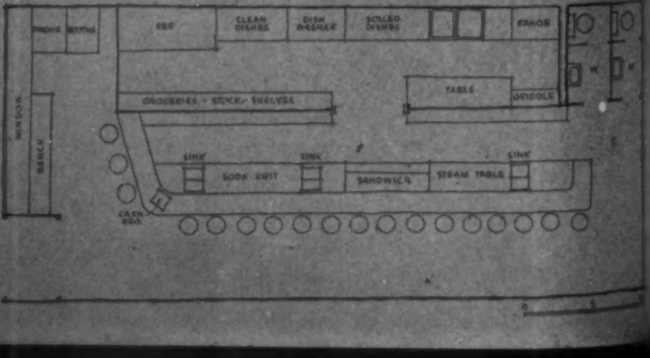
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needed to allow persons to turn on the seats to get in or out. Good practice is to use 24 in. centers for stools with backs; without backs, 22 in.

Stools, with counter heights of 32 in. to 42 in., require foot rests. Some systems have individual rests; others require a rail fastened to the counter or floor, or both. A popular solution is a counter built-in foot rest, approximately 7 in. wide and of a height suitable to counter and stool.

Another solution is to use stools of normal chair height (18 in.) placed on a platform 18 in. to 24 in. wide. The height of the platform will vary with counter height.

Many modern counter installations are as low as 30 or even 28 in., practically precluding the use of equipment behind the counter and necessitating its placement along the rear wall. This counter height is popular, particularly with women, because it does away with foot rests or platforms and the possibility of accidents. The stools used with this installation are normal chair height of 18 in. Frequently with this arrangement the floor behind the counter is lowered 6 or more in. permitting the installation of equipment behind the counter.

Counter tops should be of a material which does not discolor, scratch or chip easily. The best woods for the purpose are mahogany, walnut, maple, knotted pine, or birch, usually left unstained and impregnated with oil and beeswax.

Black glass will scratch and chip. Rubber will discolor and wear away too quickly. A good grade of inlaid linoleum, if waxed frequently, will stand up quite well. Stainless steel is good, but not as warm looking as other materials. Marble is good but expensive, and heavy construction is necessary to support it. Tile, in one color or combination of colors, is economical and durable. Terrazzo is very good and clean looking in various colors or in one shade. The entire counter, front of counter and foot rest may be continued, to blend into the floor.

Formica or similar type of plastic, in thin sheets or bonded on wood, stands up very well under heavy usage, does not discolor and needs no particular maintenance except hot water and soap.

Kitchen Equipment

Size of steam tables should be in proportion to the anticipated volume of business. Most places underestimate their requirements in this respect. It is far better to have extra capacity at first than insufficient space later.

Cutting boards in conjunction with the steam table, are useful for handling plates and carving meats. The board may be as narrow as 5 to 6 in., or wider if there is sufficient room. (While implying the question of aisles behind counters, we advise that as much clear working space as possible be allowed. Certain cities have laws specifying no less than 30 in.; some require 36.)

Floors should be of tile, terrazzo, concrete or a magnesium composition, and should be pitched to drains. A hot water faucet with a threaded end should be available for hose flushing. A sanitary edge all around the room should be 6 in. or 8 in. high, rounded at corners and part of the floor proper, to discourage the breeding of vermin and rodents. All equipment should be on legs, except built-in refrigerators or ranges. Ranges, ovens, broilers and fryers should be placed on bricks or a raised solid platform. Ranges should, as a rule, be near the rear wall, properly hooded so that exhaust fans in the hood will draw fumes and odors from the other part of the kitchen towards the rear and then out.

Refrigerators: Two smaller ones may well be more convenient and flexible than a large one — one at about 40 degrees for vegetables, dairy items, eggs, fruits and general purposes; and another, at about 36 degrees for meats, fish, etc. A freezing cabinet in which to keep frosted foods is desirable. This should be in a separate room away from the heat of the kitchen.

Spreader plates are useful between ranges to hold pots and pans. Arrange to have a cold water faucet on a swivel handy at ranges.

Decorating — Painting — Plumbing

As a rule, it is unwise to have dark walls in a food shop. Light colors — salmon, rose, green or blue with gold or silver — with darker borders of the same shades will be attractive. Mirrors make a store cheerful. They reflect light and brighten the place, besides making it appear larger. People like to look in mirrors.

Brass pipes are a good investment. Unless local regulations prevent it, try to get a union coupling in as many places as possible for hooking up equipment. It will enable any defective apparatus to be removed, repaired or replaced with a minimum of time and effort.

Savell faucets instead of the old-fashioned screw shank type will prevent leaking — an expensive loss.

If using dumbwaiter from basement or mezzanine, make sure that it is a sturdy one, with steel cable and steel body rather than wood, which absorbs drippings — a breeding place for vermin.

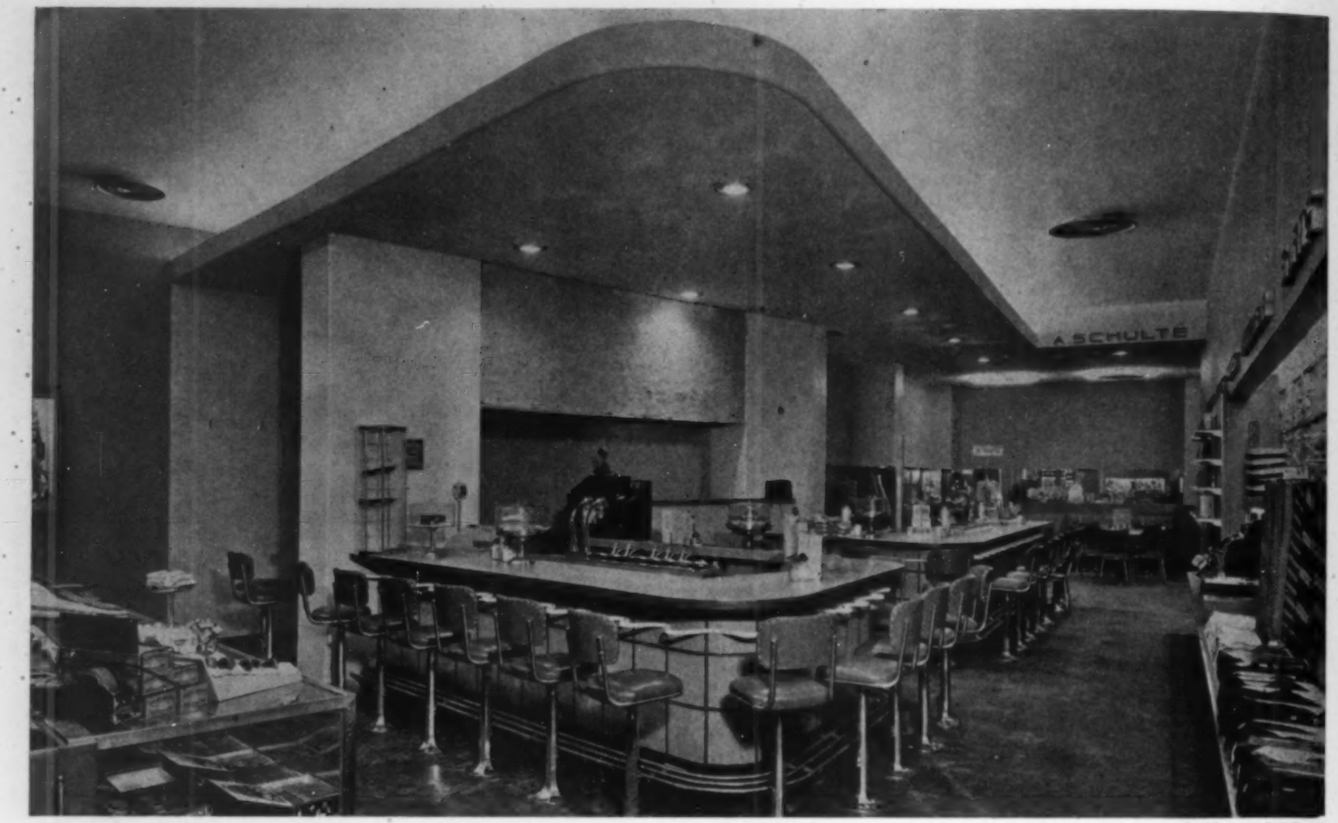
There should be plenty of electrical outlets on back bar, in dining room, behind cashier's desk, in kitchen, stock room and washroom. Fuse boxes should be conveniently placed, easily accessible and plainly marked with the designation of each station and outlet. Try to get machines of the same voltage throughout the store.

Have plenty of non-glaring lights in kitchen. Accidents will be cut down greatly and glasses and dishes will be washed cleaner.

Lighting — Cashier's Desk

A well-lit place invites trade. Fluorescent lights are economical in operation and flexible for use on back bars in various treatments. It is inadvisable, however, to use white light alone. The coffee will look greenish and other foods will appear unnatural. This defect can be overcome by combining different color tubes — daylight, rose or light amber. The combination of incandescent lights with fluorescent is also good.

The cashier's desk should be sufficiently large to take care of several customers at once, and placed near the entrance for control and supervision, but not so near as to cause congestion. It may have a small case for the sale of cigars, chewing gum, candy, etc.

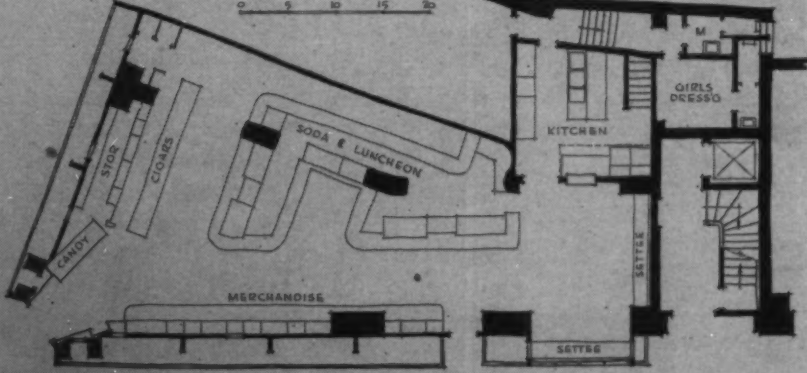


LOUFT & WOLF Photo

LATEST SCHULTE PLAN FOR CORNER LOCATION

Designed by John A. Young, Engineer
Morris Lapidus, Associated Architect

This most recent Schulte luncheonette, in Washington, D. C., is a typical exploitation of the corner site preferred by that organization for its chain locations. In accordance with Fleischman principles, the counter is on the wall opposite the entrance and visible from the street. Counter arrangement is a combination of single "U" and straight counter, with a joint steam table; otherwise they adhere to the basic layouts prescribed for each on page 108. Relationship of counter, kitchen and table area is tightly planned for maximum efficiency.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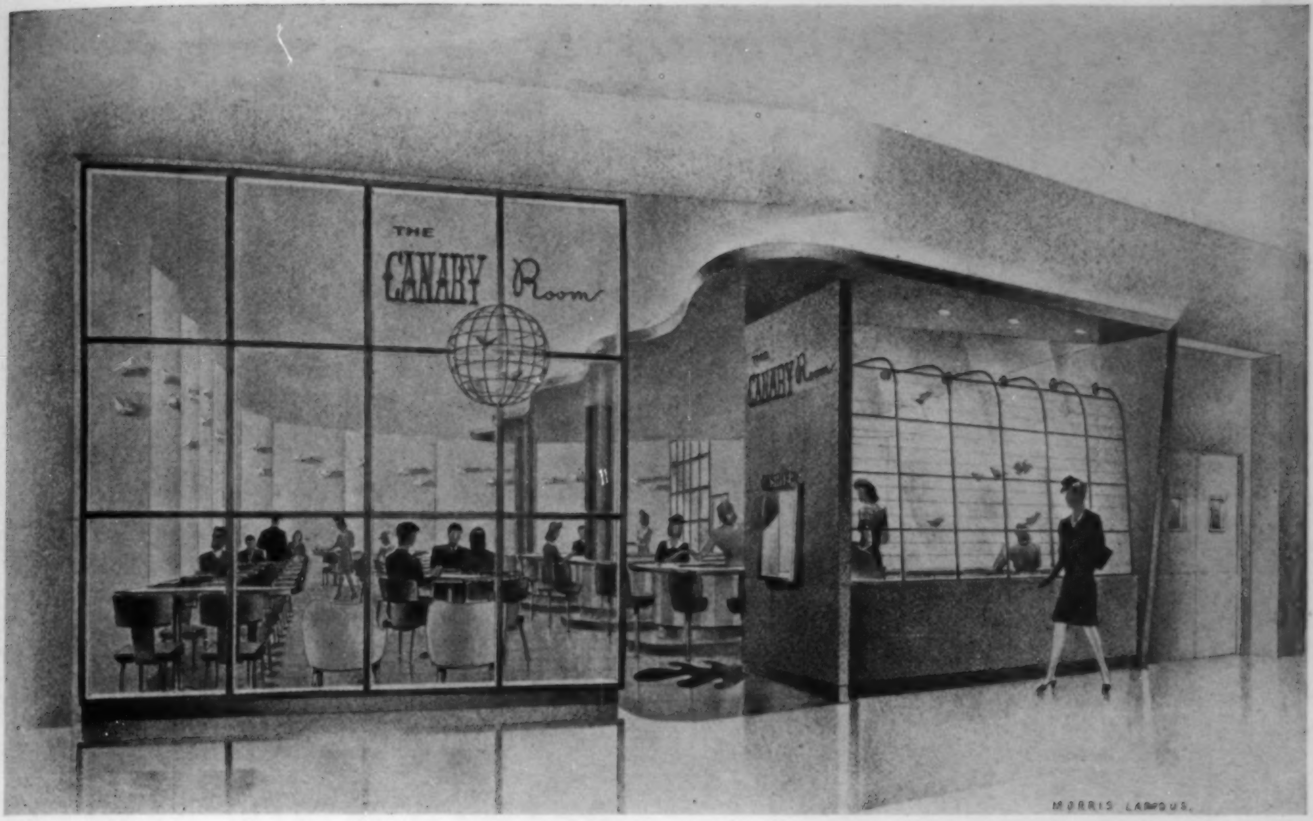
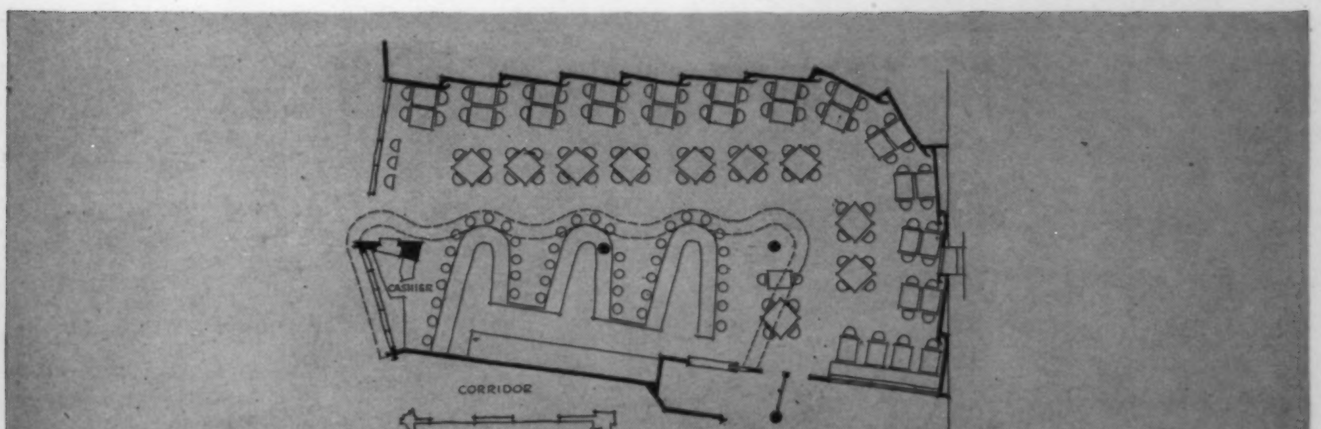

THE CANARY Room
THE CANARY Room
MORRIS LAPIDUS

INTERIOR LOCATION SETS SPECIAL PROBLEM

At least equally with luncheonettes on teeming street fronts, varieties of the type located in diversely busy building interiors require imaginative architectural treatment to make them distinctive and attractive. Bird-cage motif at Namm's, Brooklyn, is implemented by wood and glass screen at the entrance. Counter is backed with squares of architectural glass. Cashier is boxed in marble. The plan provides for separation of counter and table service. Counter waitresses get food through pass port; table waitresses enter kitchen directly.

Morris Lapidus, Architect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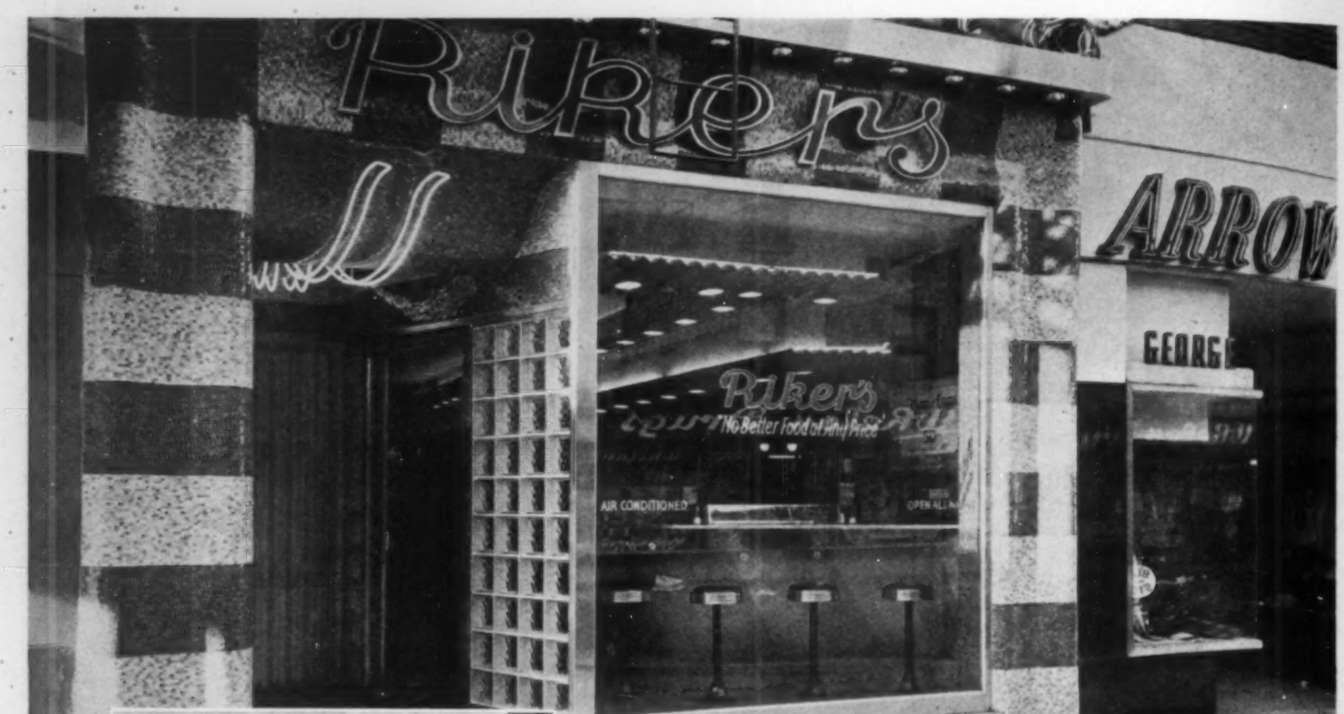
Riker's
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No Better Food at Any Price
AIR CONDITIONED
OPEN ALL
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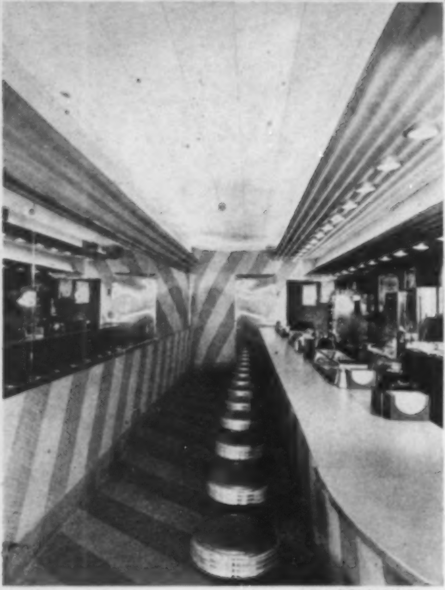
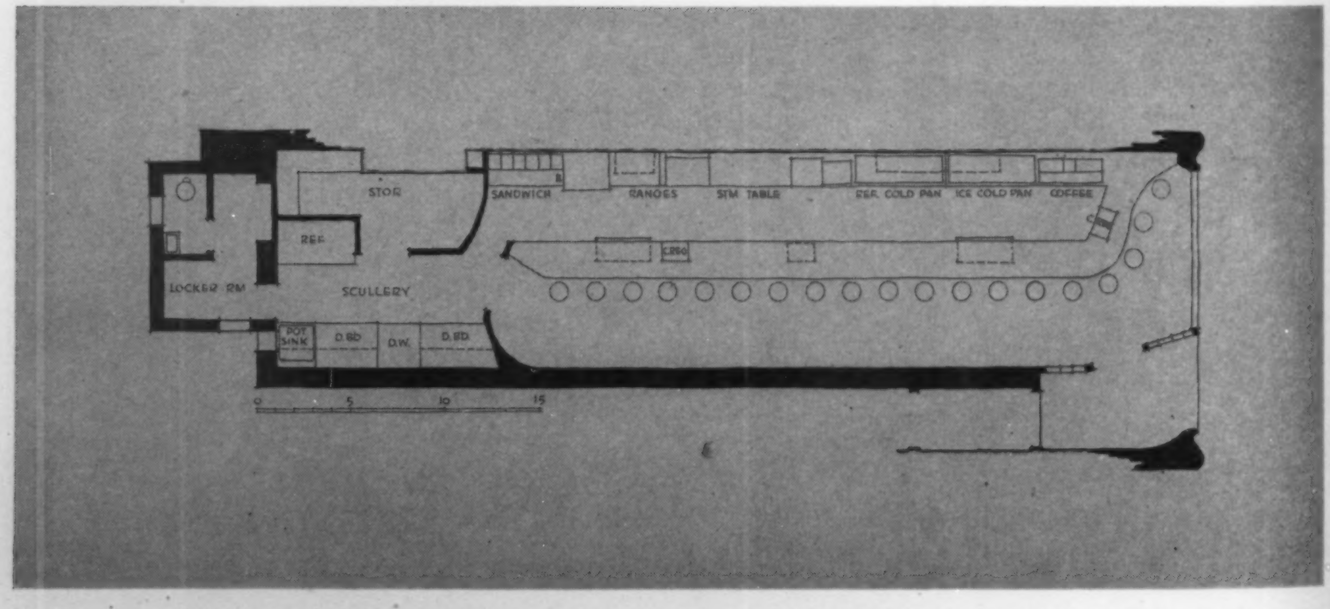


BEN SCHNALL Photo

MOSAIC FOR NEW DRAMA

Daniel Laitin, Architect; Mark J. Joseph, Engineer

MOSAIC tile was used extensively in this New York City Riker shop, according to the architect, "to make it as sanitary as possible . . . the first premise in design" — but as well to advance the new owner's intention of "transforming this set of shops from the white porcelain enamel stage." Glass tapestry mosaic, on the exterior, alternates in colors of Venetian red and buff. Special lettering originally designed for each panel gave way to owner insistence on traditional insignia "to retain some character of the old business." On the interior, diagonal tile strips are alternately cerulean blue and buff.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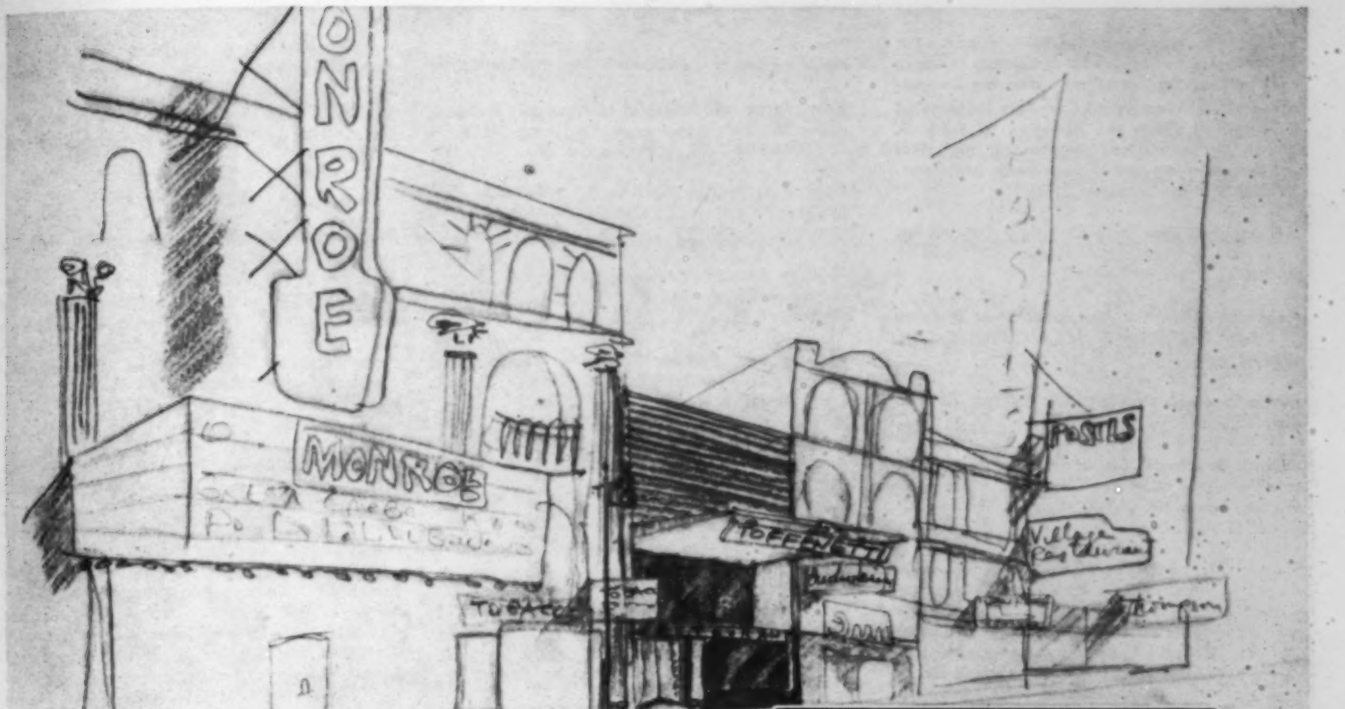
MONROE
MONROE
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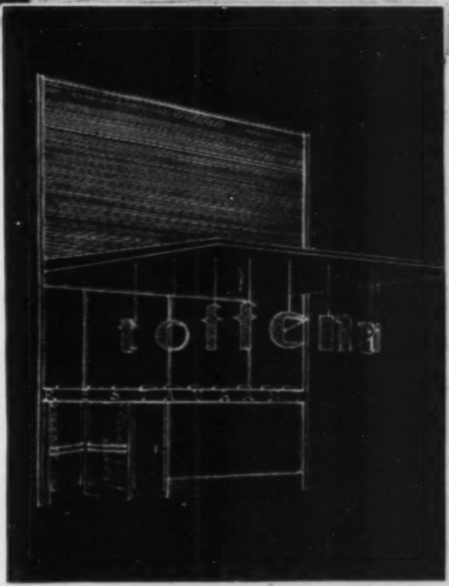
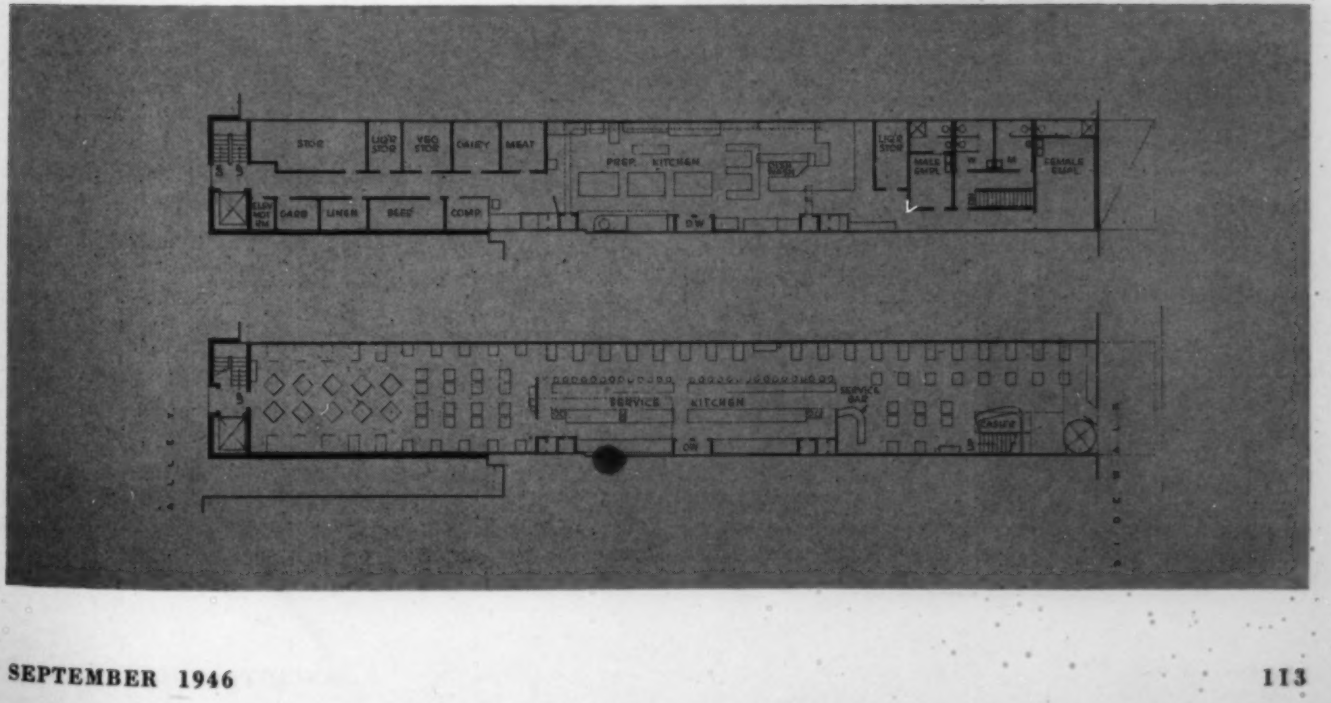
Village Pastelleria


toffenetti

VERTICAL BASIS FOR DESIGN

Skidmore, Owings & Merrill, Architects

"PART of Mr. Toffenetti's technique," say the architects, "is in keeping open to patrons' view the preparation of food, especially the operation of the service kitchen, the preliminary or heavy preparation being done behind the scenes," in this case on the second floor. Relative location of the two kitchens was the major consideration in fitting this restaurant into a Chicago location 24 by 190 ft. A basement location for the preparatory kitchen would have required very costly underpinning. "The two kitchens, one above the other, form a central core and a vertical basis of design for the entire restaurant."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GARB
LINEN
BEEF
COMP
DW
SERVICE KITCHEN
SERVICE BAR
CASHIER
DW
ALLEY
SIDEWALK

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ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

BLACK LIGHT AND COLOR MAGIC

LUMINESCENCE and "black light" suggest that kind of open magic which the modern architect especially loves. The whole process by which luminescence is produced by near-ultraviolet light, the so-called "black light" which is invisible in itself, creates a visual effect that is entrancing and mysterious.

Rarely has the emotional content of "black light" been capitalized by architecture as art, although spectacular use of it has been made on the stage of theaters. There, surrounded by darkness, figures in luminescent costumes are superlatively transformed. The only limit upon its effectiveness has been the skill and imagination of choreographer and stage designer. Some of the first attempts at architectural effects, on the other hand, have been rather infantile, consisting of decorative doodlings which jump at the spectator out of the darkness and merely suggest the possibilities dormant in the medium.

In the meantime the secondary use of luminescence, for safety, has been given enormous impetus by the war. On countless ships, proceeding through pitch-black night, phosphorescent marking tape, which glows after exposure to light, served to guide crews and passengers to their stations after "darken ship." Below decks it was used to help locate vital equipment in the event of power failure, and as a guide to firefighting equipment and escape hatches.

In aircraft, the dials of instrument panels and gauges were delineated in fluorescent paint so that they could be seen under black light; maps and navigational charts were printed in fluorescent ink, or by standard lithographic process on fluorescent-filled paper. This enabled the pilot to read his instruments and charts with eyes adapted to darkness.

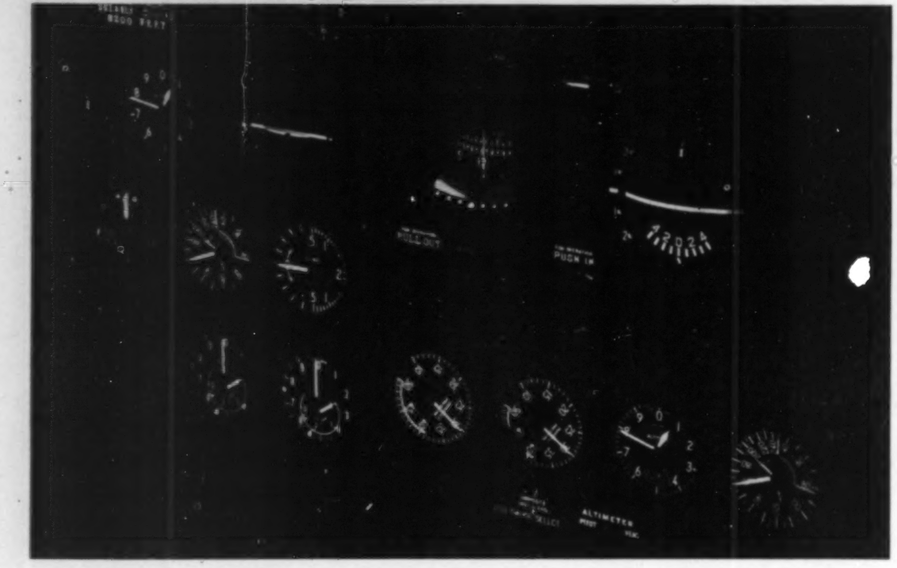
Use of the afterglow characteristics of phosphorescence for safety purposes in the event of light failure has been carried over into peacetime practice. Fire insurance companies recommend that fire-escape doors and emergency exits in public buildings, theaters, and institutions be marked with phosphorescent signs that will continue to glow for a considerable time after power failure. In fact, the city of Hartford has passed a city code requiring that all buildings of this type be equipped with exit signs that will glow for at least one half hour. In addition to directional signs, phosphorescent paint or plastic moldings might well be used to outline the base of walls in enclosed halls and stair risers.

In houses, phosphorescent materials in strategic locations can save many a cracked shin resulting from groping in the dark. Light switches and switch plates, door knobs, and kick plates are being made from phosphorescent plastics which will glow for hours after exposure to natural or artificial light. Pointing to the promised day of television, fluorescent or phosphorescent lighting offers a means of providing minimum directional lighting for rooms when lights are turned off for its reception.

It has also been suggested that luminescent paints might offer an economical means of stepping up lighting in rooms that employ conventional tubular fluorescent lighting. Luminescent paint on walls and ceilings is activated by ultraviolet light escaping from the fluorescent fixtures, and thus utilizes the otherwise wasted energy. The glow of the paint, although not apparent in the lighted room, would add to the total effect.

LUMINESCENT LIGHT	*Luminescent Light is cold light, which glows colorfully in certain chemical pigments when activated by outside radiant energy.*
BLACK LIGHT	*Black Light, the usual source of this radiant energy, is that portion of ultraviolet light nearest the visible portion of the spectrum.*

There are two types of luminescent pigments: FLUORESCENT and PHOSPHORESCENT. Fluorescent pigments emit light only during time of exposure to radiant energy and require black light for viewing. Phosphorescent pigments emit light not only during exposure but produce an afterglow. When only afterglow is to be used, sunlight or ordinary lighting can serve as "charging" medium.



An invaluable wartime use of black light was to illuminate instrument panels in aircraft. Gauges were delineated in fluorescent paint in order to be visible to dark-adapted eyes

DECORATIVE EFFECTS

In the field of decoration, luminescent lighting offers an effective kind of color magic. Its first large-scale use for decorative effect was in theatrical staging and costuming. Under black light, scenery painted with fluorescent pigments bloom with clear color, and chorus girls, costumed in fluorescent treated fabrics, become disembodied patches of color in the darkness.

In similar fields of architectural decoration where showmanship and unusual color effects are desirable, such as in theaters, bars, and night clubs, luminescent lighting offers a new medium of decoration. In such darkened or dimly lighted interiors, luminescent colors can furnish glowing accents of color in murals, architectural trim, displays, and fixtures, and also in draperies, fabrics, and floor coverings. Since luminescent color is a direct source of transformed light, rather than merely a reflecting surface, the effect is that of exceptionally pure color glowing from within. Certain fluorescent lacquers display a heightened brilliance even in daylight or shadow, with a luminous quality not found in ordinary colors. Under black light, the effect is increased.

FIRE
DANGER
FIRE HOSE
EXIT
ROOM K
ROOM E

These signs, glowing in the dark, demonstrate the use of phosphorescence for safety in the event of sudden power failure

Decorative murals have been overpainted with luminescent paints in several motion picture theaters, and, aside from their arresting effect, were found to give the audience a feeling of being within a theater rather than in the center of black nothingness. Also, theater patrons need no longer grope in darkness for seats. Carpets, woven with fluorescent-treated yarns, mark aisles clearly and less obtrusively than aisle lights.

There are no harmful effects upon eyesight that are characteristic of commercial black light. While one probably should not stare directly at its source for a long period of time any more than at any source of light, its wavelength is very near that of visible light and above that of the harmful ultraviolet rays of a lower wavelength.

Black light requires shielding at its source, however, because direct near-ultraviolet rays may produce an unpleasant haze, due to calcium in the eyeball and chemicals in some tinted eyeglasses which are mildly fluorescent. It should be shielded from people for this reason and also because it causes hair, teeth, and finger nails to "glow" or fluoresce, upon direct exposure. Sources of black light can readily be directed and shielded, just as any type of confined lighting source, and is best suited for wall, cove, and ceiling lighting. An ideal location to assure proper illumination of a fluorescent wall mural is in the ceiling. Black-light sources should be placed at an angle, centering their beams two-thirds of the way from ceiling to floor. They should be evenly spaced for equalized light upon the mural so that resulting colors will be uniformly bright.

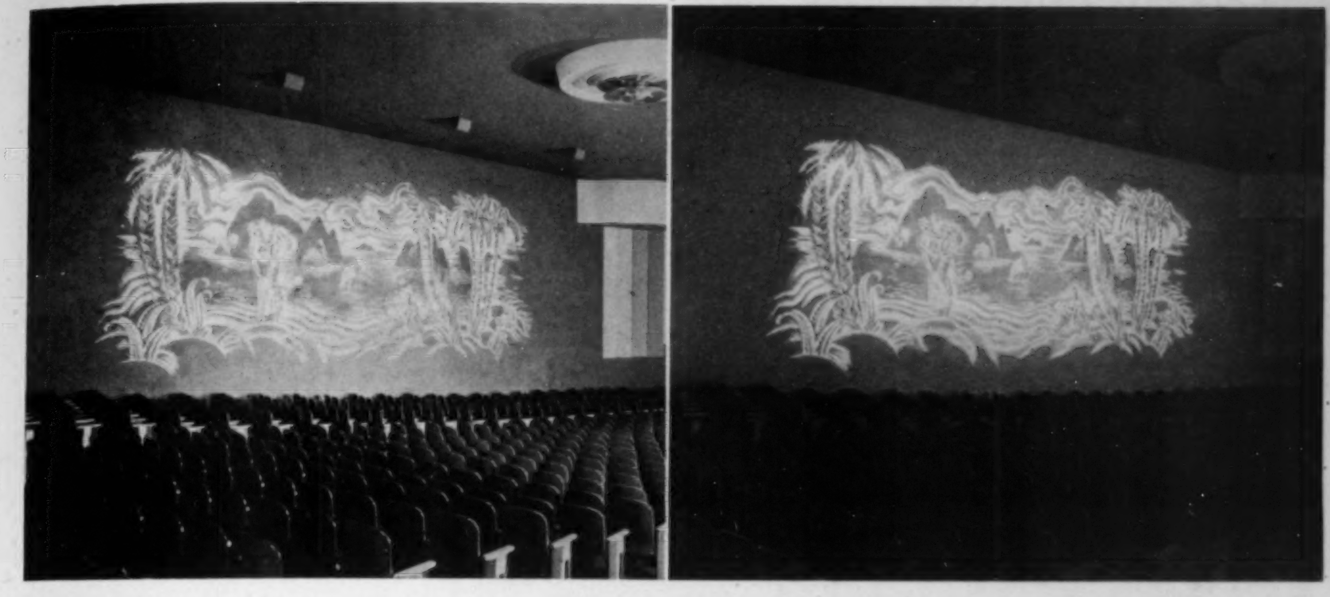
In locations where black light is inapplicable, phosphorescent afterglow can be used. After exposure to normal artificial light, phosphorescent material will glow independently for a considerable length of time, though with decreasing intensity. In a night club, the normal interval between floor shows would seem to be sufficient to "excite" phosphorescent surfaces more than enough to last for the duration of the performance, when lights are dimmed. The brightness level of afterglow of a bluish green phosphorescent pigment has been compared with the visibility of white paint on a bright starlit night and found to be 25 times as bright in the first hour. diminishing to twice the brightness, or more, after seven hours.

THE ABC's OF LUMINESCENCE

In chemistry there are certain pigments or chemical substances which absorb energy from a radiant source, and, after converting such energy to another form, re-emit it as visible, colored light. In other words, the pigment swallows up one form of light and immediately or slowly re-emits visible light of another color. The basic ingredients of these substances are organic or inorganic chemical compounds manufactured under exactly controlled conditions. Before the war they were scarce and expensive, but now are produced on a tonnage basis.

These inorganic compounds include zinc sulfides, zinc and cadmium sulfides, and calcium and strontium sulfides, depending upon which metal is predominant in each compound. In their manufacture, an exceedingly small amount of some other metal, such as copper, bismuth, silver, or manganese, is mixed with the pure compounds because none of the compounds alone would have a brilliant luminescence. When a little of this activating metal is added, however, a compound is formed which will glow colorfully. Organic materials consist of synthetic dyes, dye intermediates and their metallic salts, including such materials as rhodamine, eosine and flavine.

Consequently, luminescent compounds or pigments have the unique ability of being able to absorb radiant energy



Auditorium walls are a logical place to utilize fluorescence in the decorative scheme of theaters. Left: A mural usually is effective only when house lights are on. Right: When painted in colors that are fluorescent under black light, it glows subtly in the dark. Black light sources, located in the ceiling, confine their unseen rays to the mural. Auburn Theater, Rockford, Ill.: Edward Paul Lewin, Architect

principally from near-ultraviolet light, and re-emit it as visible light.

In commercial practice, these substances are incorporated in paints, dyes, or plastics and a ready source of activating energy used, so that large surfaces and objects can be given luminescence with an altogether new freedom.

There are, of course, the two different types of luminescent pigments: fluorescent and phosphorescent. Fluorescent pigments emit light only during the time of activation. When the activating source of ultraviolet or black light is cut off, the fluorescent pigments cease to glow practically immediately. Phosphorescent pigments, however, have a useful afterglow and continue to emit visible radiant energy for varying periods after activation ceases. This afterglow varies in duration from 30 minutes to eight to ten hours, depending upon the phosphorescent material used. When only the afterglow characteristics are to be utilized, the activating source need not be black light but can be sunlight or any form of artificial lighting, which of course must be removed before the phosphorescent effect can be seen.

COLORS AND INTENSITY

Colors of fluorescent pigments in daylight or under regular lighting, appear as white, green, buff, cream, light yellow, deep yellow, cerise, and blue. But during excitation in comparative darkness these colors change to various other colors: light yellow to brilliant orange-yellow, deep yellow to rich red, and slate blue to light blue. Other pigments fluoresce green and yellow. Phosphorescent pigments after excitation range in color from blue to orange yellow. Certain organic substances have been developed which have bright, rich daylight color and retain practically the same color under black light, merely increasing in brilliance.

Aside from the color, the intensity or brightness of fluorescence depends on the type of pigment. For example, under the same excitation, one pigment fluorescing a yellow light may be brighter than another pigment which also fluoresces yellow. The brightness or intensity also varies with the intensity or power (wattage) of the exciting light. Each of these pigments will be considerably brighter under a 100-watt "black" light than when exposed to a 2½-watt argon glow lamp, which is a weak source.

In the case of phosphorescent pigments, the intensity and length of afterglow depend on many factors, including (1) type of pigment, (2) medium in which it is incorporated, (3) intensity of the exciting light, (4) the length of time that the pigment is exposed to the light, and (5) the temperature. For instance, one type of phosphorescent pigment will glow for a longer time than another when both are excited by the same light for an identical period of time. Either pigment would require a much longer exposure to a 25-watt lamp than to a similar 100-watt lamp to excite its full duration of phosphorescence.

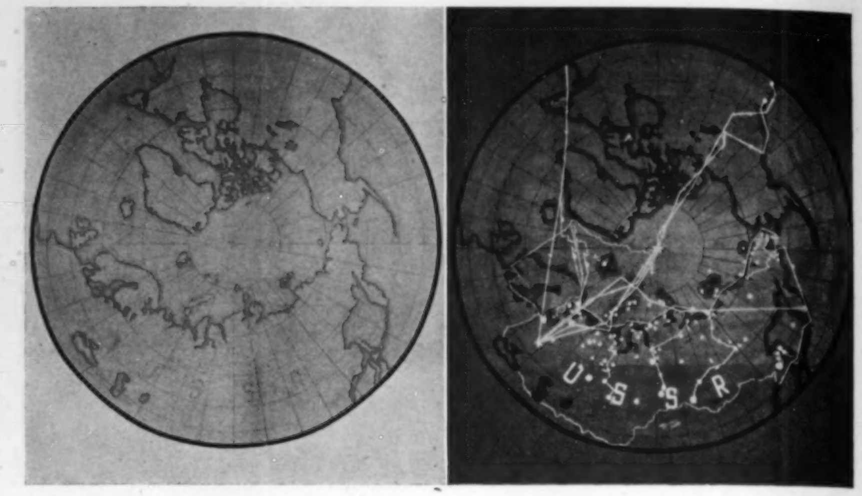
The amount of activation required to attain maximum afterglow also depends on the type of pigment. Generally speaking, a pigment that has a long afterglow requires more time of exposure to an exciting light than a pigment that has a short afterglow. A few seconds direct exposure to sunlight will fully excite a short-afterglow pigment, while a long-afterglow pigment may require a minute or two. The sun, of course, is a very intense light source and will excite these pigments more rapidly than any man-made light.

Another fact to keep in mind is that the initial brightness, which is the brightness of afterglow immediately after the exciting light is removed, is not the same for all phosphorescent pigments. The brightest pigment may be about ten times more intense than the dimmest pigment, the brightness of the others being somewhere between them.

It is difficult to say definitely to what point the afterglow can fade before it becomes no longer visible. In complete

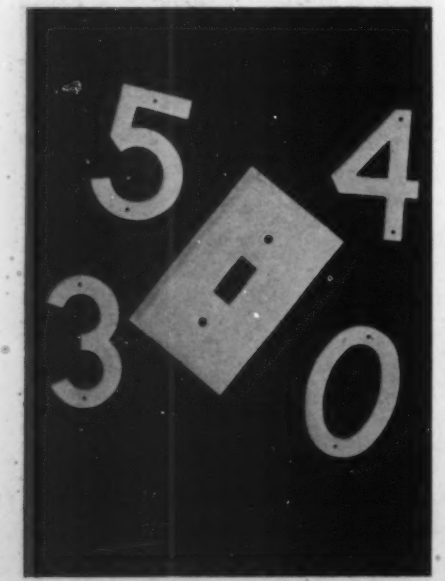
On ceilings, too, fluorescence imparts a self-luminous effect in glowing color, adding interest to an otherwise dim void

Fluorescent-treated yarns are woven into carpet so that under black light they guide theatergoers in darkened auditoriums



You may remember seeing this at the New York World's Fair in 1939. One of the first striking uses of fluorescence, this air-routes chart gave little indication of its fluorescence until exposed to black light. Then directional lines "jumped" at spectators in bright color

darkness, the afterglow of most pigments can be detected by dark-adapted eyes for twenty-four hours or longer, particularly where large areas are to be covered. For decorative effect, its useful duration would be less, of course, from 30 minutes to about eight to ten hours, depending upon the pigment and area covered. In addition to the brightness and the size of the area covered, other factors which are involved are the degree of surrounding darkness, the sensitivity of the eye, and the distance from which the phosphorescence is observed.



Phosphorescent door numbers and switch plate can be seen for six to eight hours after exposure to sunlight or other illumination

DURABILITY

Similarly, it is not easy to formulate an exact standard of durability for luminescent pigments, due to the varying factors and conditions involved. Some phosphorescent types, however, were in continuous use for two or three years during the war. All of the zinc and cadmium pigments, both fluorescent and phosphorescent, are quite stable under conditions of normal service. Under certain conditions of outdoor service and in certain vehicles, some pigments may show a photochemical change called "light-darkening." Calcium and strontium phosphorescent pigments are sensitive to water and acids, and, if not protected by a binder medium, are unstable. When properly protected, these pigments are said to give service for at least six months outdoors. Organic pigments, which have a brighter daylight color, now possess a fair resistance to sunlight and excellent durability indoors.

LUMINESCENT PAINTS

Both types of luminescent materials, fluorescent and phosphorescent, are used in making luminescent paints. Best results are obtained when luminescent paints are applied over bright white surfaces. In general, it is good practice to use an undercoat of regular paint or two undercoats using the same vehicle as that used in the luminescent coating. Since fluorescent pigments are comparable to regular pigments in their paint-making properties, fluorescent paint can be applied readily by brush, spray gun, or palette knife.

Phosphorescent pigments, because of their coarse crystalline structure, provide poor brushing characteristics to paint. The best method of applying is by spray gun. Uniform covering, however, can be obtained by the application of two coats over at least one coat of white primer.

No radium, radioactive material or elemental phosphorus is used in these pigments, and therefore luminescent materials are non-toxic. Of the sulfides used, only cadmium sulfide can be thought of as a possible hazard, but in the amounts contained in paint, it is impossible to consider that this compound of cadmium will be as dangerous as is the ordinary application, either by brush or spraying, of paints using lead pigments. In the removal of the cadmium-containing paint from old surfaces, precautions ordinarily used for lead paints will be entirely satisfactory.*

LUMINESCENT TEXTILES

Textile fabrics may be coated or printed with luminescent pigments, or processed with fluorescent dyes, for such applications as marking tapes, draperies, upholstery, and wall and floor coverings. Treated yarns have been used with success for luminescent carpeting.

LUMINESCENT PLASTICS

Plastic rods, sheets, discs, cast films, and laminates are being made, which contain luminescent pigments incorporated in transparent or translucent plastics at the mill. Also, ordinary plastic articles can be coated with luminescent paints or printed with luminescent inks. In the first case, the luminescent pigment is incorporated with the resin before the molding or casting operation.

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*Quotation from a letter by Dr. C. K. Drinker, Dean and Professor of Physiology, Harvard University School of Public Health.

In the other, the plastic product is molded or finished and then given a luminescent coating by one of several printing processes — letterpress, silk screen, lithography, dusting process, or decalcomania.

LUMINESCENT INKS AND PAPERS

Also available, although not as applicable to the field of architectural decoration, are pigment-coated paper and luminescent printing inks.

ACTIVATING LIGHT SOURCES

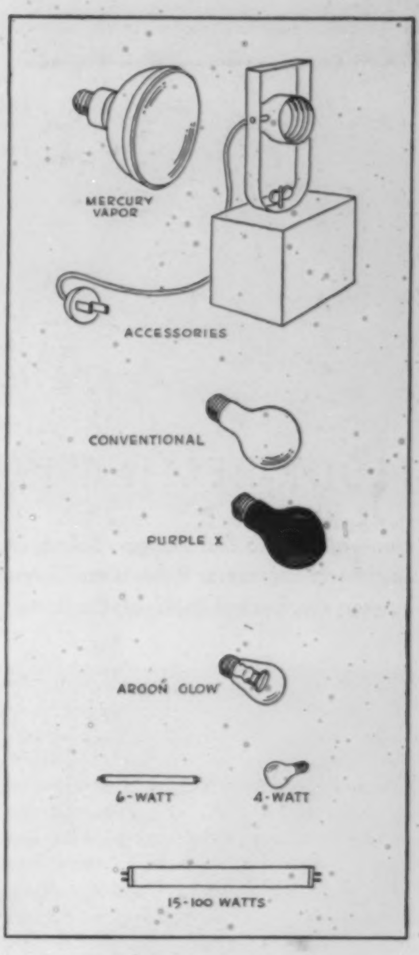
The sun, of course, is the most efficient light source. Its use, however, is limited to the excitation of phosphorescent pigments since fluorescent pigments must be viewed during the time of exposure to the light source and the sun is too bright to permit full viewing of fluorescence.

Mercury Vapor Lamps: A number of mercury-arc lamps, ranging from a 100-watt to 1,000-watt (water-cooled) and higher, are available. They are probably the most efficient light sources for the excitation of both types of luminescent pigments, but if used to excite fluorescent pigments they must be equipped with suitable filters to eliminate the greater part of visible light. They can be used only with alternating current, and require a few minutes warm-up before output reaches normal. If turned off, they must cool before they will relight.

Fluorescent Tubular Lamps: These are very efficient for use with phosphorescent pigments, but do not deliver sufficient ultraviolet light for the excitation of fluorescence, except at close range. However, the new fluorescent lamps which contain the so-called "360 BL" phosphor are highly efficient for use to excite fluorescence, but they must be equipped with filters to eliminate most of the visible light. A 4-watt (known as the RP-12) fluorescent (360 BL) lamp operates on a 24-volt direct-current circuit. Also available are 6-, 15-, 30-, 40-, and 75-watt tubular fluorescent lamps, for use on regular 110–120 volt, 60 cycle alternating-current circuits. They are suitably filtered, and can be used for efficient excitation of fluorescent or phosphorescent pigments. If phosphorescence only is to be utilized, any of these lamps without filters can be used.

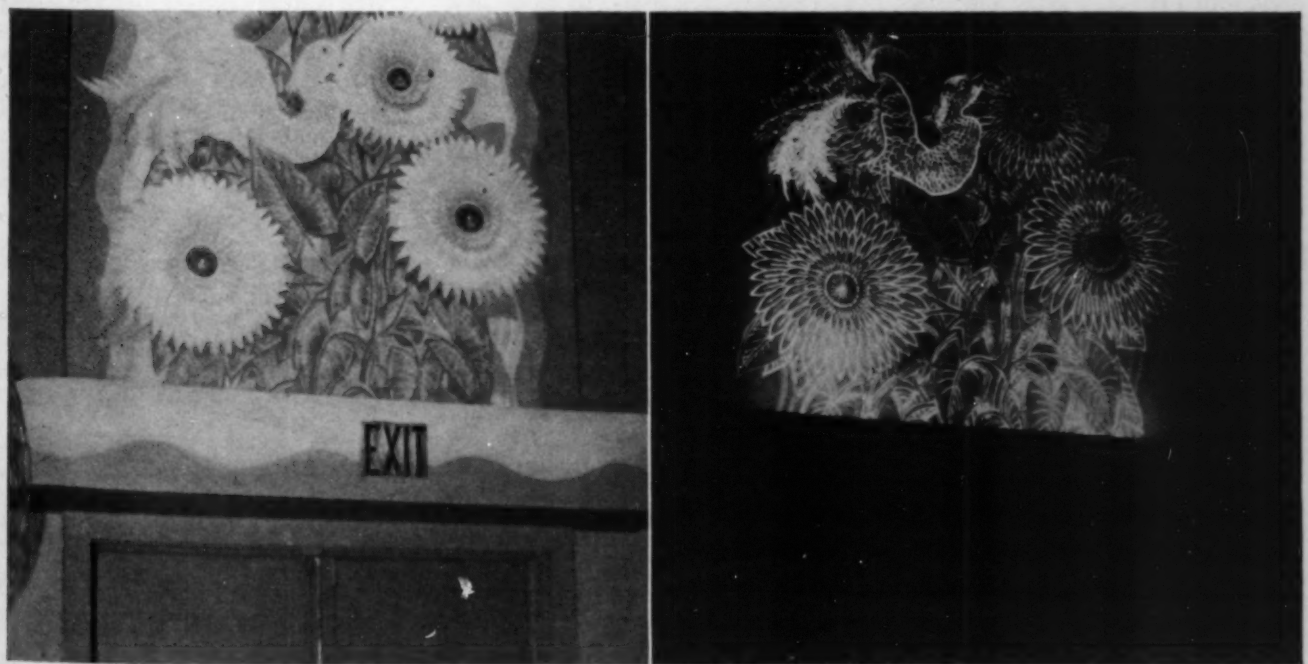
Incandescent Filament Lamps: Filament lamps are used primarily for the excitation of phosphorescent pigments but the lamp can also be used to excite fluorescence if it is properly filtered to exclude white light. A "purple-X" bulb is a filtered filament lamp (250 watts) operating at overvoltage on either alternating-current or direct-current circuit for intermittent use to excite fluorescent pigments. It should not be used for periods longer than 10 minutes as the bulb will overheat and soften.

Argon Glow Lamps: These lamps are small in size, low in cost, light up immediately, and have a long life. They are available in conventional sizes and operate on either alternating current or direct current. Although they are satisfactory for the excitation of either fluorescence or phosphorescence, their use is limited to such uses as glow lamps and small decorative effects, because of low output, $\frac{1}{16}$ to $2\frac{1}{2}$ watts.

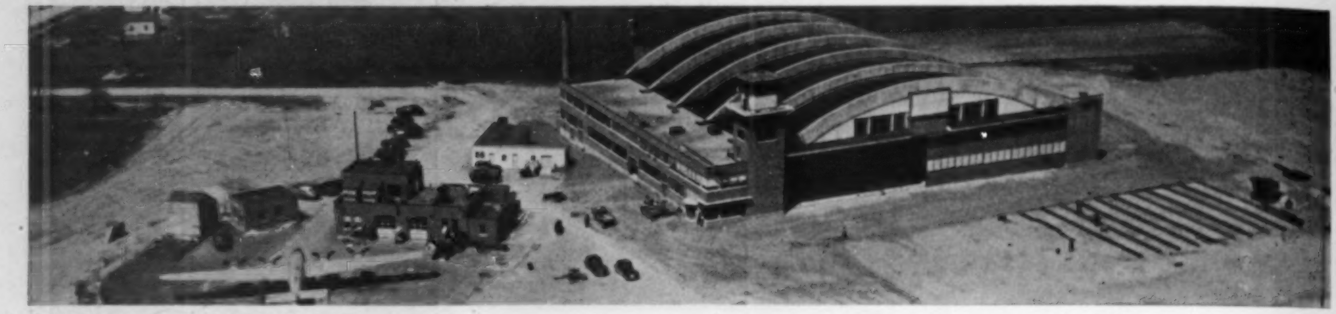


Some activating sources of black light

Photos courtesy of The New Jersey Zinc Company; Switzer Brothers, Inc.; Black Light Products; Stroblite Company; Monsanto Chemicals Company, Plastics Div.; Alexander Smith & Sons Carpet Company; Theatre Catalog 1945; Transcontinental & Western Air, Inc.



Normal under ordinary light, this theater mural glows mysteriously in darkness. Centre Theater, Bloomfield, N. J.: M. D. Sornik, Architect



FLOOR-HEATING IN HANGAR DESIGN

General Electric Test Hangar, Schenectady, N. Y. Office of Marcus T. Reynolds, Architects-Engineers; Roberts and Schaefer Company, Engineers; Joseph L. Ottenheimer, Mechanical Engineer; Corbetta Construction Company, General Contractor

The heating of hangars customarily presents a problem because of their high ceilings, great cubic area, and the large size and frequent opening of their doors. The General Electric Test Hangar at Schenectady, N. Y., required an especially efficient heating system because it is used not only as a hangar but also as a laboratory, requiring both adequate comfort for working personnel and relatively constant temperatures for development and test work. Indications were that this would be a logical building type for radiant heating, by the circulation of hot water through a carefully designed system of pipes embedded in the concrete floor; a premise borne out by later tests.

Hangar is 160 ft. wide and 175 ft. deep, with a two-story office and workshop wing and an adjoining 60-ft. control tower. A steam vapor heating system is used for the offices and workshops, but the entire hangar area is heated by 20,000 ft. of 1¼-in. pipe in the concrete floor for the circulation of hot water.

DESIGN AND INSTALLATION

The radiant-heating system is designed to provide comfortable conditions in cold weather with floor surface temperature of 85° F., and water supply temperature not to exceed 130° F.

Floor area of the hangar is divided into 20 heating panels, each 40 ft. long and from 24 to 40 ft. wide. The longest radiant panel coil was designed to be 1,600 ft. long, which indicated use of 1¼-in. pipe for proper flow resistance. Wrought-iron pipe was employed because of its adaptability to bending and welding, and sinusoidal pipe coils, to insure full water circulation.

In periphery floor panels, spacing of pipes is on 12-in. centers; and in interior floor panels, on 24-in. centers. Floor slabs were placed upon a 12-in. fill of compacted gravel. Each radiant heating floor panel is isolated from adjacent panels and walls by a preformed expansion joint. Wherever floor panel supply or return lines pass through construction expansion joints, flexibility is provided by expansion loops, covered with asbestos cell insulation jacketed with roofing felt, all of which is embedded in the concrete. Each radiant heating floor coil has a manual air relief valve for bleeding air to prevent air binding, and the system has master automatic air-relief valves.

BOILER EQUIPMENT AND CONTROLS

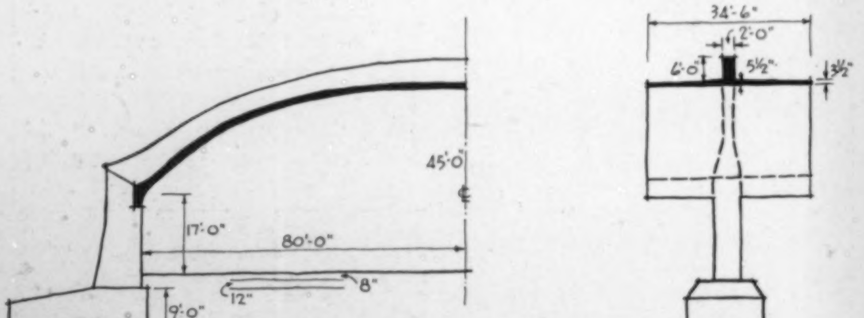
Boiler equipment consists of two cast-iron sectional steam-heating boilers, fired by heavy oil burners. Water for floor-panel coils is heated by means of a steam-water heat exchanger. Positive water circulation to the floor panel coils is obtained by means of two electric centrifugal pumps. Temperature within hangar area is controlled by an outside thermostat and a pilot limiting the temperature of the water for the heating panels. These two controls activate the steam valve which supplies heat to panel water as required.

LEAK TESTING

A hazard in such a heating system is the possibility of leaks in pipe joints, bends, and seams that cannot be reached for repair once the floor slab has been completed. Therefore, as each radiant panel pipe coil was completed, and before concrete was poured, it was hydrostatically tested under 150 lb. per sq. in. pressure for 24 hours, losing a minimum of 5 lb. per sq. in. Water was then drained and the coil pneumatically tested at 150 lb. per sq. in., inspecting all joints for leaks with a soapy solution.

INITIAL OPERATION

The system was completed and placed in service in March, 1946. Radiant floor panels were filled with water when the temperature of the concrete was 34° F.; air temperature within the hangar, 40° F.; and outside temperature, 35° F. After five hours of operation, a complete set of readings showed that the outside temperature had dropped to 25° F.,



HALF SECTION OF TYPICAL SHELL RIB AND BUTTRESS

LONGITUDINAL SECTION OF TYPICAL SHELL PANEL

Detail of concrete-arch clear-span roof and buttress of General Electric Test Hangar while the radiant floor panels had reached 84° F. and the air temperature within the hangar had risen to 48° F. At the time of these readings, the temperature of water supplied to the radiant floor panels was 130° F., and that of returned water, 90° F.

After 15 hours of operation, the temperature of the air within the hangar assumed the desired 60° F., while the outside temperature continued to drop. Average vertical temperatures from breath line to ceiling of the hangar showed a variation of less than 2° F.

While no extreme winter weather has been encountered since this initial operation, it is expected that such a condition can be met without difficulty, due to the system's previous performance and the heat "pick-up" shown upon starting and operation.

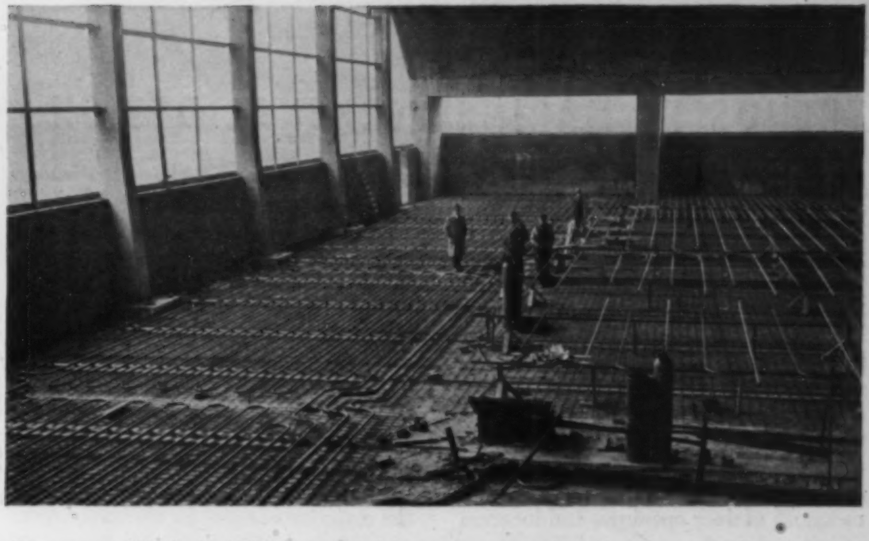
HANGAR CONSTRUCTION

Of interest also in these days of material shortage is the construction of the hangar, itself, which is of reinforced poured concrete with brick and glass curtain walls. The hangar proper, 160 ft. by 175 ft., is roofed by a concrete-arch clear-span roof with a height of 17 ft. at side walls and 45 ft. at the center of the span.

The roof is divided into five panels having four main and two end arch ribs homogeneous with a concrete roof slab or shell, covering a width of 34 ft. 6 in. by the full span of 160 ft., and constructed in the inverted T-beam manner. Ribs are 2 ft. thick and 6 ft. high, and the roof slab supported from the bottom of the rib is 5½ in. thick at the rib and 3½ in. thick at the construction and expansion joints. Each rib springs from a concrete abutment pier, 3 ft. by 10 ft., which in turn is carried on a concrete footing, measuring 15 ft. in width, and extending in the form of a foot 33 ft. away from the building. The keyway measures 3 ft. by 3 ft. by 15 ft. Footing, pier, rib arch, and roof arch slab are all homogeneous, the footings being carried down to solid rock base.

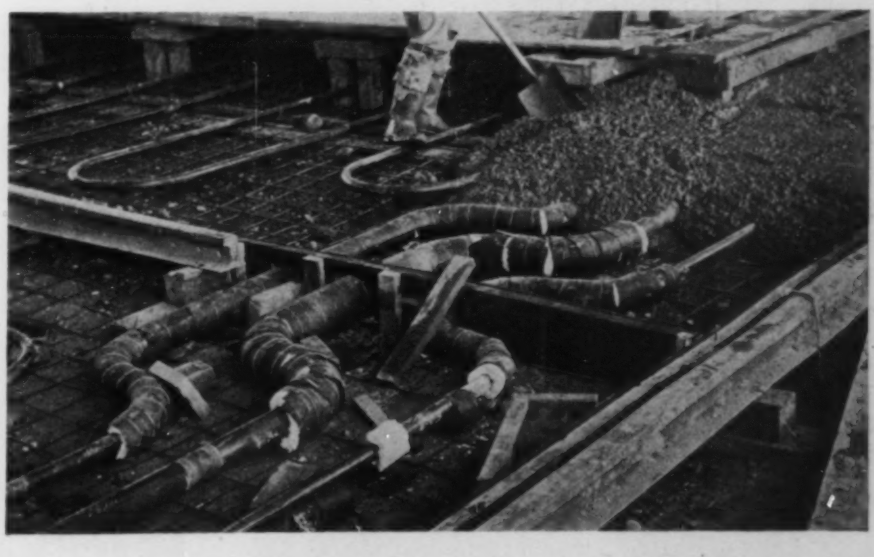
This particular type of construction was selected because it made possible immediate building with readily available materials. Its fire-resistant qualities were demonstrated by a wartime accident when a B-29 bomber crashed inside a similar hangar in Dayton causing fire and explosion of six smaller aircraft within the hangar. The intense heat caused practically no damage to the hangar other than minor surface damage.

Other advantages of this type of hangar roofing is that it may be painted white for improved interior lighting, and that the elimination of exposed steel trusses affords no nesting surfaces for birds, which often frequent such areas and cause no small expense for cleaning.



Floor area, 160 ft. by 175 ft., is divided into twenty radiant-heating panels. Spacing of pipe is on 12-in. centers, in periphery panels, and on 24-in. centers, in interior panels

Radiant-heating coils form an integral part of the floor. Cement is poured on a 12-in. fill of compacted gravel. Before pouring, pipe joints are pressure-tested for leaks



Where supply or return lines pass through construction expansion joints, expansion loops are provided, covered with asbestos cell insulation, then jacketed with roofing felt

TRENDS IN MARINE TERMINAL DESIGN

Now that the world has returned to the peacetime pursuit of trade, new interest centers on marine terminal and port construction. The Record, in collaboration with the publication World Ports, presents a factual report on design features recommended by port engineers and operators.

THE function of a marine terminal is to provide efficient handling of cargo between ship and rail or truck. Its workable operation depends largely upon the design and relationship of component parts, such as length and width of sheds and platforms, vertical clearances, spacing of wall and interior columns, dimensions of door openings, and location of railroad tracks.

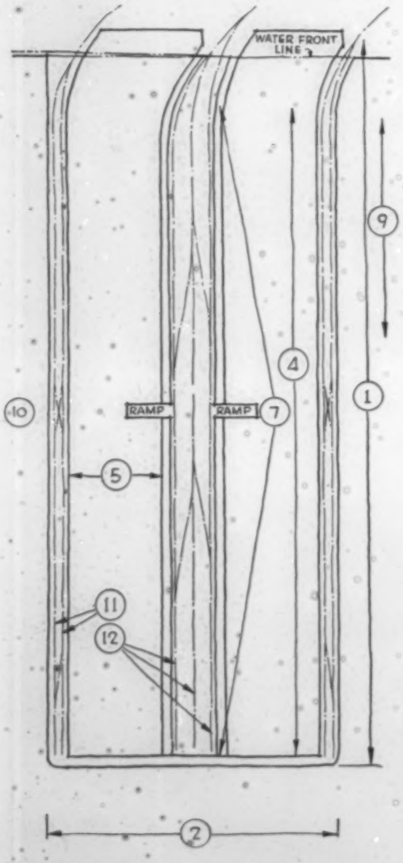
Basis of the following recommendations for the design of marine cargo terminals was a survey conducted by two port engineers, E. C. Earle of Los Angeles and Frank G. White of San Francisco. Port engineers and operating companies were canvassed by questionnaires to learn the general dimensional factors which they favored for future construction, in order to provide a helpful index of recommendations based on experience.

The "double pier" type of terminal with one-story sheds was approved in the majority of cases for the handling of general cargo. Recommended dimensions for a pier of this type are shown in the accompanying table. The dimensions consist of the highest figure recommended by anyone, the lowest figure, and the average of all replies. These are recommendations of port engineers. Operators of steamship companies and stevedoring companies gave averages for certain basic dimensional factors as shown in the right-hand column of the table.

Note should be made of the fact that recommendations of all experts in the survey were in relatively close agreement as to dimensional recommendations, despite the fact that they had been made with local considerations in mind.

The recommendations are summarized as being indicative of a trend toward wider transit sheds with wider apron wharves, resulting from changes in types of vessel construction, size of vessels and modern methods of cargo handling.

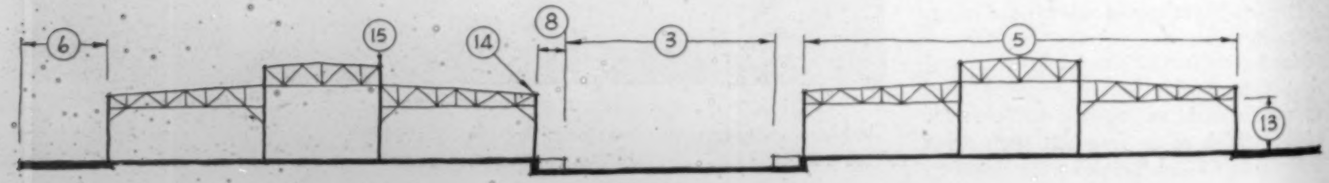
Many engineers question the usefulness of the loading platform (guide numbers 7 and 8) in terms of the cost of the additional pier width required to provide for it. Its appearance in the plan is for reference purposes only. Individual cost conditions, such as whether the terminal is to be constructed on piling or fill, or is to be a marginal wharf, are the governing factors.

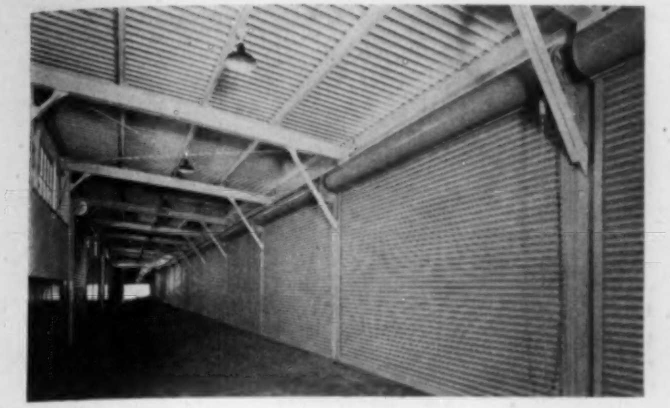


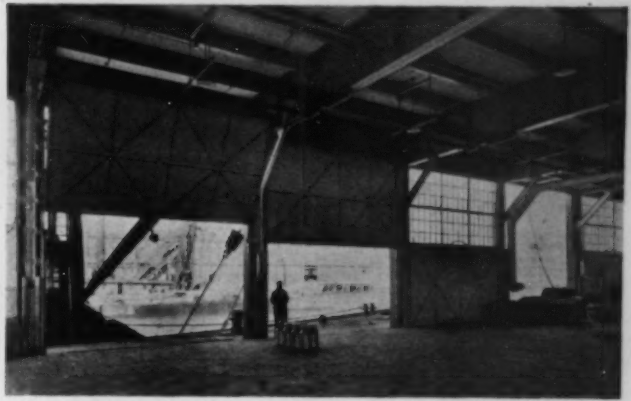
DESIGN RECOMMENDATIONS FOR

GENERAL CARGO MARINE TERMINAL FACILITIES

	Dimensional Factor	RECOMMENDATIONS (ALL DIMENSIONS IN FEET)			Average Recommendation by Steamship and Stevedoring Companies
		Highest	Lowest	Average	
1.	Over-all length of terminal	1500	500	1100	920
2.	Width of double pier	676	316	489	
3.	Width between platforms	164	38	86	
4.	Length of shed	1460	450	810	
5.	Width of shed	220	96	155	200
6.	Width of apron	50	15	33	33
7.	Length of loading platform	1460	450	840	
8.	Width of loading platform	17	4	12	
9.	Average length of ship accommodated	600	400	470	
10	Depth of water alongside	40	30	35	
11.	No. shipside railroad tracks	4	1	2	2
12.	No. landside railroad tracks	5	1	3	2
13.	Minimum vertical clearance in shed	24	12	17	25
14.	Longitudinal spacing of wall columns	44	10	24	
15.	Longitudinal spacing of interior columns	100	20	33	
16.	Width of door openings waterside	24	12	16	
17.	Height of door openings waterside	20	9	14	
18.	Width of door openings landside	24	10	16	
19.	Height of door openings landside	20	9	12	







MORRIS ROSENFELD Photo

Good pier shed design features continuous series of doors. Shown here are two general types. Left: The rolling curtain type door is made with interlocking slats, fitted with end locks for easy operation, and counterbalanced by means of coil springs inside the roller shafts. Wind locks prevent pulling out in high winds. Right: The turnover door is divided into two leaves or sections, the lower section rising behind the upper one and both then swinging away from the door header to assume a horizontal position

PIER DOORS—PRINCIPLES AND TYPES

TYPICAL pier and dock shed construction embodies solid ends, inshore and offshore, in which may appear utility openings in the form of windows and doors. However, by "pier doors" is generally meant that series of large doors running the length of the shed, with emphasis upon those serving the shipside or landside portion of the terminal. These doors are of two basic types: the rolling curtain door with metal slats, and the horizontally-hinged section-type door with panels formed of structural members covered with heavy sheet metal, usually 16 to 14 gauge. A recent survey reveals an over-all preference of port engineers for the rolling curtain door, although several major ports, particularly on the east coast, prefer the folding type.

Regardless of type of construction, certain major principles apply.

Size: Height and width must permit unimpeded flow of mobile freight-handling equipment and regular and easy traffic to and from apron area. (See Table of Recommendations, opposite page.)

Spacing: Doors, particularly shipside doors, should be numerous to the extent of being practically continuous.

Durability: Doors must withstand frequent opening and rough usage. Rolling curtains or sections should be heavily galvanized by hot process on account of moisture and salt air.

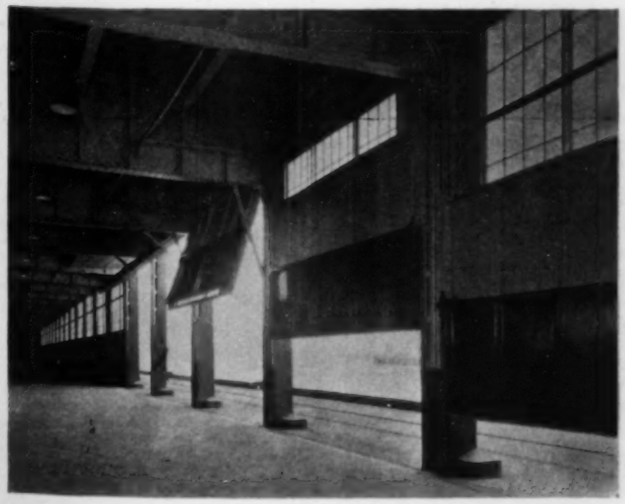
Operation: Primary requirement is simplicity. Doors should open upwards so that close proximity of stacked cargo will not impede their opening. Doors generally are manually operated, there being little time element in their operation. Motor-operated doors are preferable, however, from the standpoint of convenience and protection against pilferage.

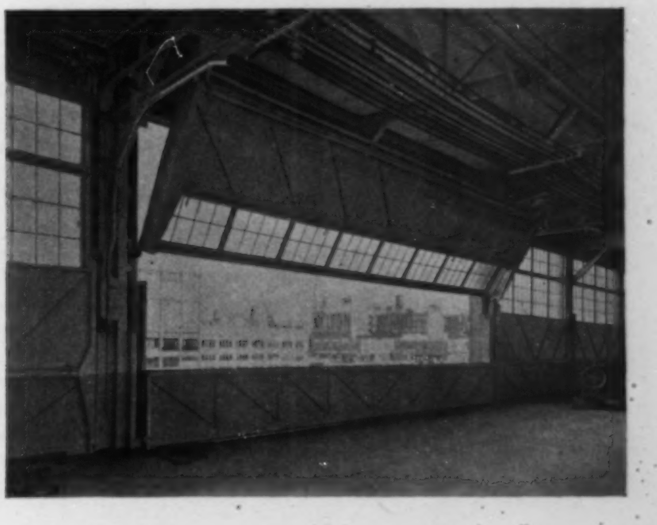
Safety: Manufacturers have incorporated safety devices to prevent uncontrolled descent in case a chain breaks.

Lighting: Doors can provide additional natural lighting within shed, particularly in two-story pier sheds where sash in upper panels can furnish light to that area. Solid doors, however, give more protection against fire and pilferage.

Maintenance: Doors require systematic maintenance. A regular program of lubricating moving parts and making minor repairs will prolong their life indefinitely. The rolling-curtain type door can be repaired readily in case of damage by sliding in new interlocking sections to replace damaged portion. This type has an additional advantage of adjusting itself to settling of pier structure.

Left: The lift-swing door is similar to the turnover door in operation except that it swings inward at the bottom. This has the advantage that in bad weather the door does not have to be opened fully to permit cargo hoisting lines to clear the door. Right: The lower section of this type of door may be left in position when it is desired to provide a barrier for passenger decks of steamship piers





DESIGNING THE HOME DARKROOM*

THE construction of the darkroom will be influenced by these factors: How often will the room be used? How many people are to work in it simultaneously? And, what type of work is to be done there — film development, contact printing, enlarging, or the "works"?

A room that is to be used frequently, even by only one person, should naturally be larger and better fitted for convenient operation than one which is to be used only on occasion. Likewise, two workers will definitely require more space than one. And since photography is a companionable art, and most photographers enjoy having another work with them from time to time, two workers should be considered the rule rather than the exception.

As for processing operations, contact printing and film development require relatively little space, but enlarging is a bit more demanding. Many amateur photographers today either own enlargers or have definite plans for acquiring one as soon as possible. Therefore, from any standpoint it is not practical to think of the home darkroom exclusively in terms of an additional closet. A darkroom may be located in a large closet, but for photographic efficiency and for added home appeal, it is advisable to approach the proposed darkroom as a room — complete in itself, and yet an integral part of the house.

Location Fundamentals

The location of the darkroom will, of course, be determined by what space is available, yet consideration must be given to convenience in relation to plumbing and electrical facilities, uniformity of temperature, and dryness.

An attic is seldom satisfactory for a darkroom, because unless well insulated it is likely to be too hot in summer and too cold in winter. The installation of plumbing in the attic is often difficult and usually expensive. Spillage and overflows can cause extensive damage. A *damp* cellar, on the other hand, is just about as poor a location as an attic. Dampness causes deterioration of films and papers, and results in weak, mottled pictures. A first or second floor room is likely to work out nicely if space can be allotted there, but the *ideal* location for the darkroom is a dry basement — particularly if uniform temperatures are maintained there — since plumbing and electrical connections are usually nearby.

But regardless of location and size, the first requirement is obviously that the room be capable of excluding all light. The sensitivity of modern photographic materials is such that total darkness is an absolute necessity. No white light can be permitted to leak in around the door or through any other opening.

The second requirement is that space for necessary equipment and apparatus should be so arranged as to allow the work to progress in the most convenient and efficient manner with a minimum of lost motion. The general flow of all photographic processing is from dry work to wet, and, finally, to drying or dry work again. In printing, this is exemplified by dry work at the contact printer or enlarger, then wet work as the print moves through the developer, stop bath, fixing bath, and wash water, and dry work once more as the print is dried again. It is therefore good practice to plan the darkroom in such a manner that all of the dry work can be done on one side, or at one end, and the wet work on the other side or the opposite end.

A darkroom of the type of Plan A (page 125) is very well adapted to all amateur work, and provides all necessary facilities for processing and print making, so that the home photographic unit is complete. Notice that the number of electrical outlets in the room provides for two safelights on the "wet" side, a safelight and outlets for the printer and enlarger on the "dry" side, and a central overhead indirect lighting box. An indirect lighting box can be used, incidentally, for a white light, or if preferred, for a general over-all safelight.

Home Darkroom Sinks

Since the majority of the operations on the "wet" side of the darkroom will center about the sink, and since several operations may be carried on in the sink itself, it is important that the sink be large and properly placed.

A good standard size for the sink is 36 to 48 in. long and 18 to 20 in. wide. The best sinks for darkroom work are those made of stainless steel, but they are also the most expensive and, these days, the most difficult to get. Enameled iron sinks are also very satisfactory, but if a metal sink is not obtainable, wooden sinks can be utilized.

Waterproofed plywood has made good sinks, but cypress is more or less the standard wood for such construction. Tongue and groove joints should be used and the sides of the sink should be held in position by steel tierods. A rubber-based paint, when obtainable, gives a good binding for wooden sinks. Wooden sinks are, by and large, not as good for amateur use as metal, for the main trouble with wooden sinks is that when used only intermittently, they may dry out with resulting opening of the seams.

Whatever type of sink is used, however, it is best to overlap the linoleum or other shelf covering about the edges of the sink, so that spillage or drippings may be easily wiped off the shelf surface and into the sink. Note in the sketches of Plan A how the linoleum shelf covering, on both the wet and dry sides, rounds the corner and runs in an unbroken sheet up the wall to a height of 6 or 8 in. Such design prevents seepage down the corner and protects the wall from splashings.

Tray and Drying Racks

Note also, on the "wet" side, that space has been provided below the sink for a tray rack. If the tray rack is built as a unit, to slide into the space provided, it may be easily removed for cleaning as occasion demands.

On the "dry" side of the darkroom a most important inclusion is that of drying racks for prints. These racks are simple wooden frames covered with cheese-cloth — on which the prints may be laid — designed to slide in and out on fixed wooden supports.

Floor and Bench Covering

A sheet of linoleum which is given a slight turn-up at the sides to protect the corners, is recommended for floor covering in a darkroom of this type. Benches and shelves are all mounted on 2 by 4 studding and covered with at least ¼-in. plywood or other suitable lumber. Note that toe space is provided at the bottom of all cabinets and structures.

Ventilation

Regardless of the type of home darkroom decided upon, there is one further factor that should be taken into consideration in planning and construction — that is, the matter of proper ventilation. Small darkrooms which are not ventilated properly will show a decided rise in temperature, as the result of enlarger and body heat, in a short period of time. The best solution to this problem is the use of an automatic darkroom fan for forced draft ventilation, but if this is not possible, light-trapped ventilators should be installed near the floor and ceiling.

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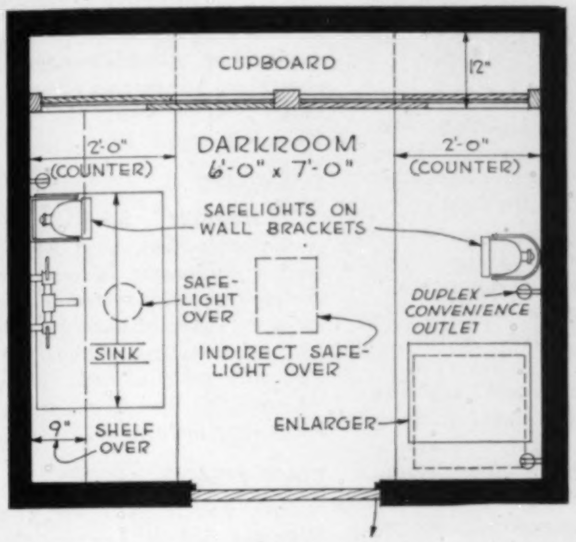
*By N. C. Ferguson, Eastman Kodak Co.

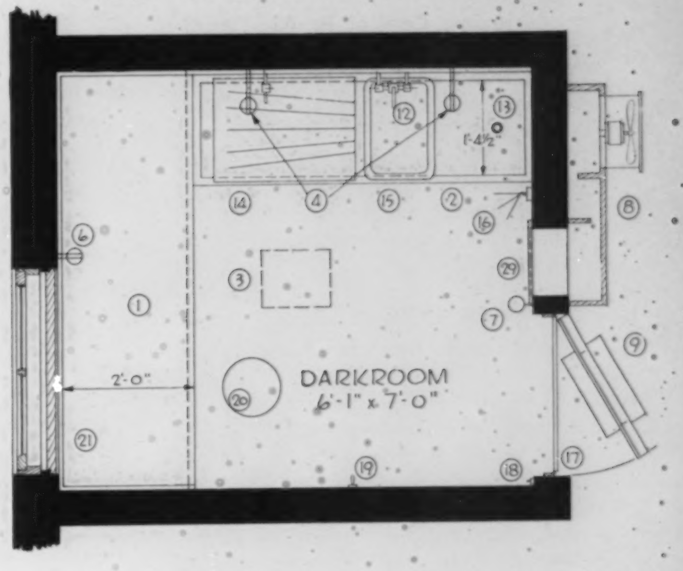
DARKROOMS: HOME

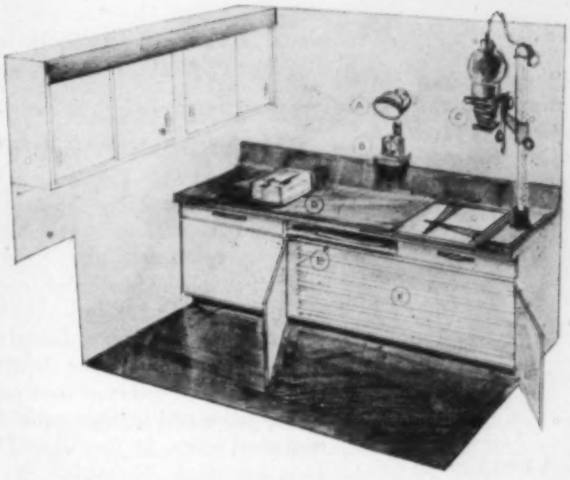
(*Continued on page 129*)

Plan A (by Eastman) Approx. scale: 3/8" = 1'

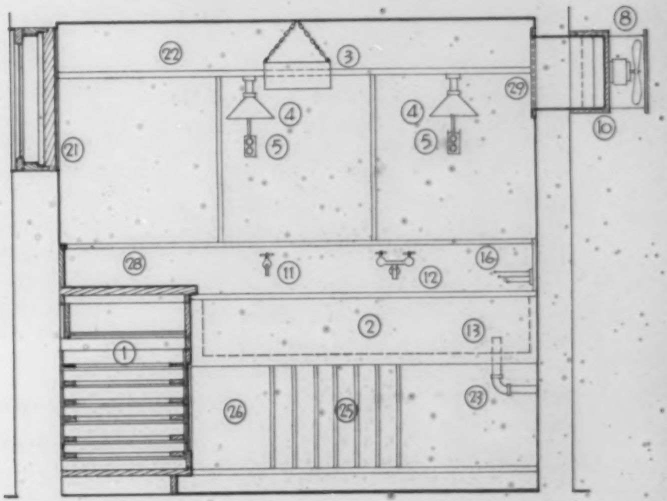

CUPBOARD
12"
2'-0" (COUNTER)
DARKROOM 6'-0" x 7'-0"
2'-0" (COUNTER)
SAFELIGHTS ON WALL BRACKETS
SAFE-LIGHT OVER
SINK
INDIRECT SAFE-LIGHT OVER
DUPLEX CONVENIENCE OUTLET
ENLARGER
9"
SHELF OVER

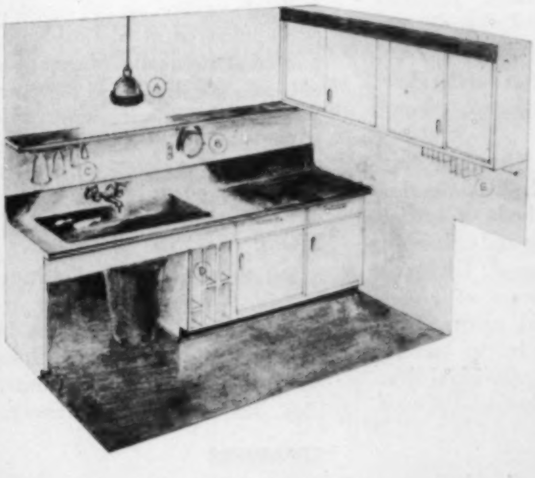
Plan B (by Lee Parsons Davis) Approx. scale: 3/8" = 1'


DARKROOM 6'-1" x 7'-0"
2'-0"
1'-4½"

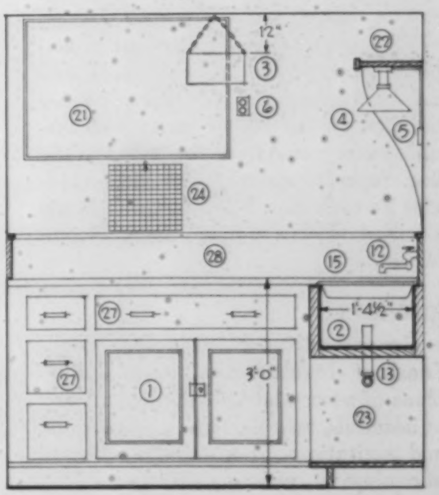


A — Adjustable safelight
B — Timer
C — Precision enlarger
D — Printer
E — Trimming board
F — Print drying racks





A — Darkroom lamp
B — Adjustable safelight
C — Graduates
D — Tray rack
E — Negative drying line



1. Print drying racks
2. Lead lined sink
3. Indirect safelight
4. Adjustable safelights
5. Convenience outlets
6. Enlarger outlet
7. Bright light
8. Exhaust fan
9. Light-trapped air inlet
10. Foul air outlet
11. Cold water faucet
12. Hot and cold water
13. Variable drain pipe
14. Removable drain board
15. Sliding trays
16. Towel rack
17. Door gasket
18. Air thermometer
19. Coat hook
20. Stool
21. Window blind
22. Storage shelf
23. Storage space
24. Trimming board
25. Tray rack
26. Storage space
27. Full depth drawers
28. Micarta back board
29. Air outlet grille

MANUFACTURERS' LITERATURE

AIR CONDITIONING

Corrosion Control in Air Conditioning: The Chromate Treatment of Their Water Systems. How to employ chromate to the best advantage in various central systems of unit air conditioners. Data on chromate consumption and effects of chloride concentrations. Graphs and examples. 12 pp. Mutual Chemical Co. of America, 270 Madison Ave., New York 16, N. Y.

HEATING

Automatic Heat for Real Living. A pocket-book sized manual for the home owner and prospective owner describing what heating comfort is and how to get it. Discusses the various types of heating systems, the advantages and applications of each, the choice of fuel, etc. Provides a check-list of the heating system in the home, and an explanation of heating terms. 56 pp., illus. Surface Combustion Corp., Toledo, Ohio.*

Warm Floor Comfort (Catalog No. 4). Bulletin on oil floor furnace designed for homes with or without basements. Description of unit, specifications, installation details, placement diagrams. 16 pp., illus. The Coleman Co., Inc., Wichita 1, Kansas.

Heating the Modern Home Electrically. Discussion of electrical home heating, containing factual data on insulation, home wiring, climatic requirements. Description of available models, with specifications tables and diagrams. 18 pp., illus. Electromode Corp., Rochester 2, N. Y.

Williams Oil-O-Matic Heating. Folder outlining the patented features of the Oil-O-Matic Low-Pressure principle of operation with photographs and brief description of all low pressure burners, boiler-burner units and furnace-burner units in the Oil-O-Matic line. Separate specifications sheet available for each unit. Williams Oil-O-Matic Division, Eureka Williams Corp., Bloomington, Ill.

KITCHENS

Case Histories of Successful Mass-Feeding Installations. Contains 28 plans of successful kitchen installations in hospitals, schools, hotels, restaurants and institutions. Photos and description of equipment, planning tips, and a brief article on the essentials of kitchen planning also are included. 36 pp., illus. The G. S. Blodgett Co., Inc., 50 Lakeside Ave., Burlington, Vt.

LIGHTING

America's No. 1 Lighting Job. Résumé of the relighting of West Point study rooms and classrooms, together with information from the lighting research and eyesight studies upon which the relighting was based. Included also are details of the lighting units used. 6 pp., illus. The Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo.

"Custom" Fluorescent Lighting with Standardized Fixtures. Catalog of 11 standardized commercial fluorescent fixtures suitable for offices, stores, schools, institutions, drafting rooms and laboratories. Includes specifications and installation data, and maintenance features. 34 pp., illus. Sylvania Electric Products, Inc., Salem, Mass.*

(1) Flexible Lighting to Step Up Furniture and Appliance Displays; (2) Lighting Menu for Tomorrow's Restaurant; (3) Lighting that Attracts and Pleases for the Modern Restaurant. Three more in a series of "lighting perspectives" planned by architects and designers. Each includes a floorplan and lighting diagram. 8, 12 and 12 pp., respectively, illus. Lamp Dept., General Electric Co., Nela Park, Cleveland, Ohio.*

PLASTICS

Du Pont Plastics. A new booklet describing the special characteristics and combinations of properties, product applications, recent developments, in the Du Pont line. Included are Lucite, Polythene, Nylon, BCM, CCA, Butacite, Pyralin, Plastacele and Teflon. 12 pp., illus. E. I. du Pont de Nemours & Co., Inc., Plastics Dept., 626 Schuyler Ave., Arlington, N. J.*

How to Work with Kimpreg Plastic Surfaced Plywood. A fabrication-data sheet on the methods of sawing, glueing, painting, nailing and refinishing Kimpreg surfaced plywood. Gives the names and manufacturers of recommended resin glues and paints. Illustrates uses of Kimpreg in the building and industrial fields. 6 pp., illus. Kimberly-Clark Corp., Plastics Division, Neenah, Wis.*

Plastics for Light Conditioning. The uses of plastics in the lighting field for shades and reflectors. Advantages claimed, and models now available. 12 pp., illus. General Electric Co., Pittsfield, Mass.*

SHEATHING

New Water-Repellent Gypsum Sheathing. Specifications for erection of water-repellent gypsum sheathing; details showing application of brick veneer, wood siding, asbestos cement, etc., over sheathing. Advantages claimed. 12 pp., illus. Gypsum Assn., 211 W. Wacker Drive, Chicago 6, Ill.

SPRINKLERS

"Automatic" Sprinkler Systems (Bulletin No. 56). A catalog of fire protection equipment including wet and dry pipe sprinkler systems, installations for extra and light hazards, electric and mechanical control systems, fire alarms. Full description of each. 20 pp., illus. "Automatic" Sprinkler Corp. of America, Youngstown, Ohio.

STAIR TREADS

Free Footsteps from Fear with Wooster Safety Treads. Catalog of treads, nosings, thresholds, window sills, curb bars and elevator sills. Applications, installation details. 16 pp., illus. Wooster Products, Inc., Wooster, Ohio.

STEEL JOISTS

The Handbook of Steel Joist Construction, 1946 edition. Article on open web steel joists for use in floor and roof construction; standard specifications for steel joist construction; recommended abbreviated regulations for use in building codes; code of standard practice of the Steel Joist Institute; recommendations of the Institute for handling and erection of steel joists; and a properties and loading table for open web steel joists. 16 pp., illus. The Steel Joist Institute, 3709 24th St., N. E., Washington 18, D. C.

STEEL UNITS

The Rigidsteel Standard Building. Full information on the development of prefabricated steel building — stiff-jointed structures made up of a system of beams, rigidly joined together to form a rigid frame. Specifications, description, advantages claimed, applications. 8 pp., illus. McCloskey Co., 313 Sixth Ave., Pittsburgh 22, Penn.

STORE FRONTS

Set the Stage for Selling. Photos and renderings of a variety of modern store fronts, including both new construction and remodeling. Information on a line of storefront units. 4 pp., illus. Brasco Mfg. Co., Harvey, Ill.

STRAINERS

Adsco Strainers and Separators (Bulletin No. 46–50). Catalog giving

(Continued on page 132)

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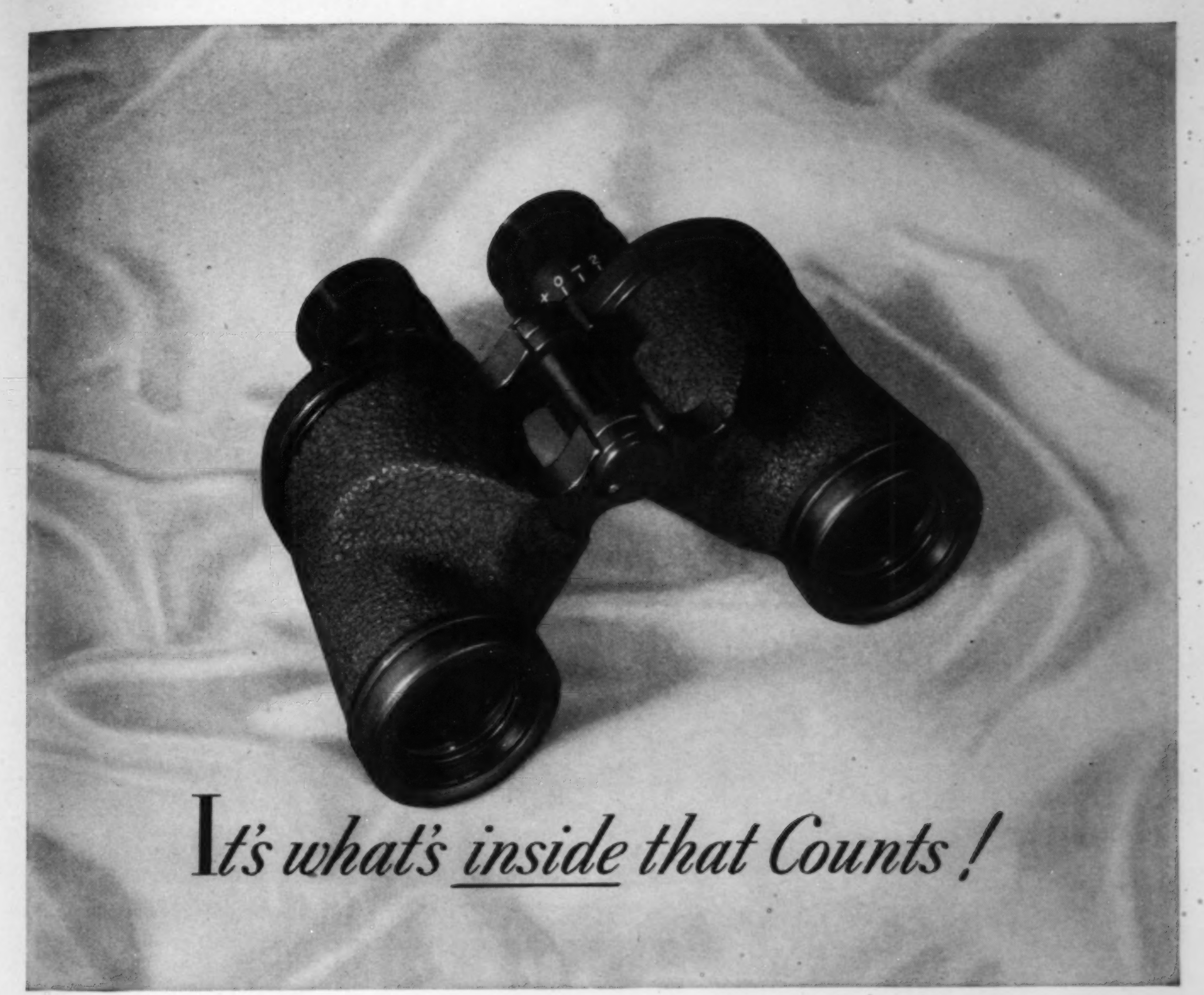
*Other product information in Sweet's File, 1946.



STREAMLINED . . . well designed . . . balanced and good looking, yes. But the *heart* of those fine binoculars is the precision ground prisms *on the inside.*

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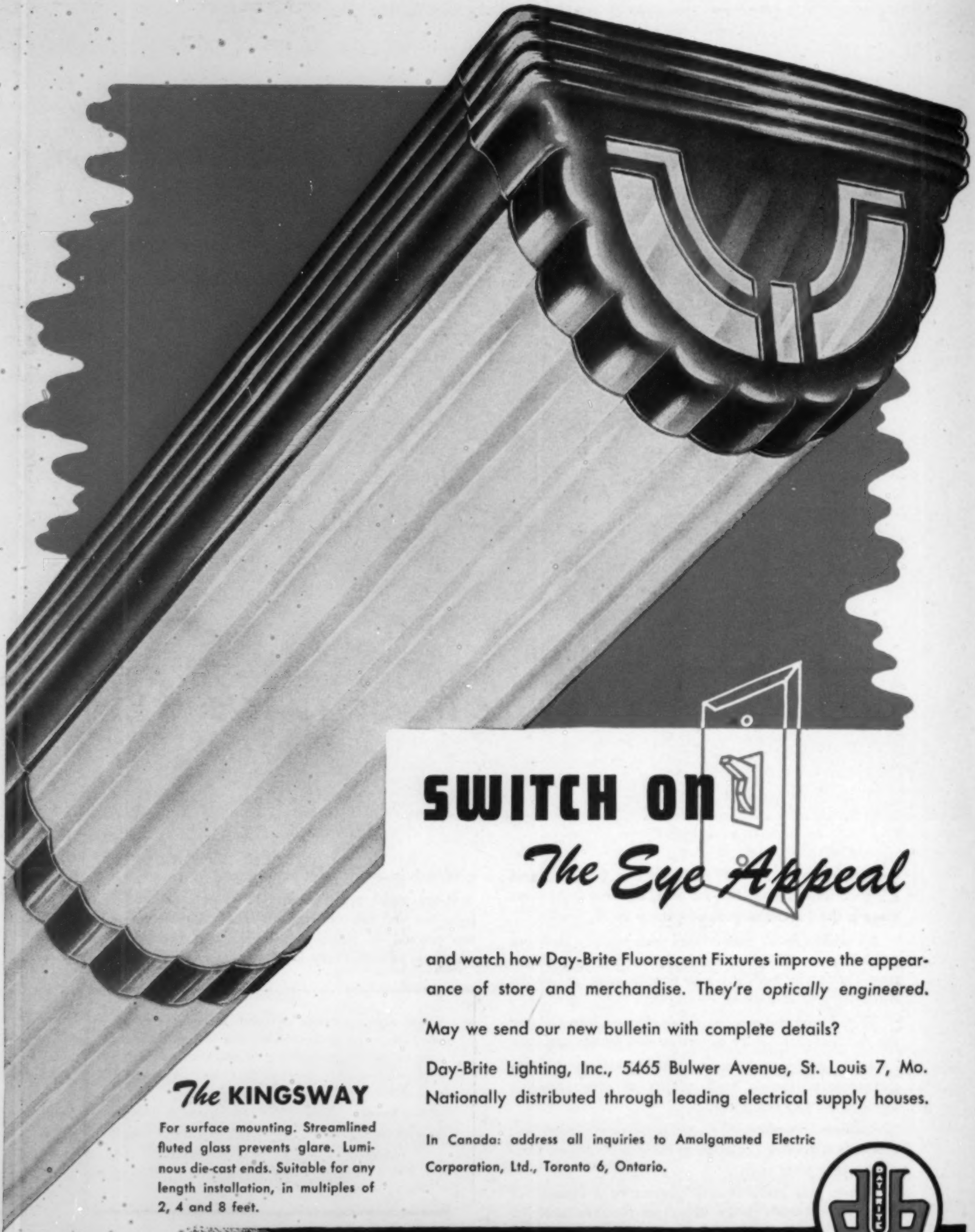

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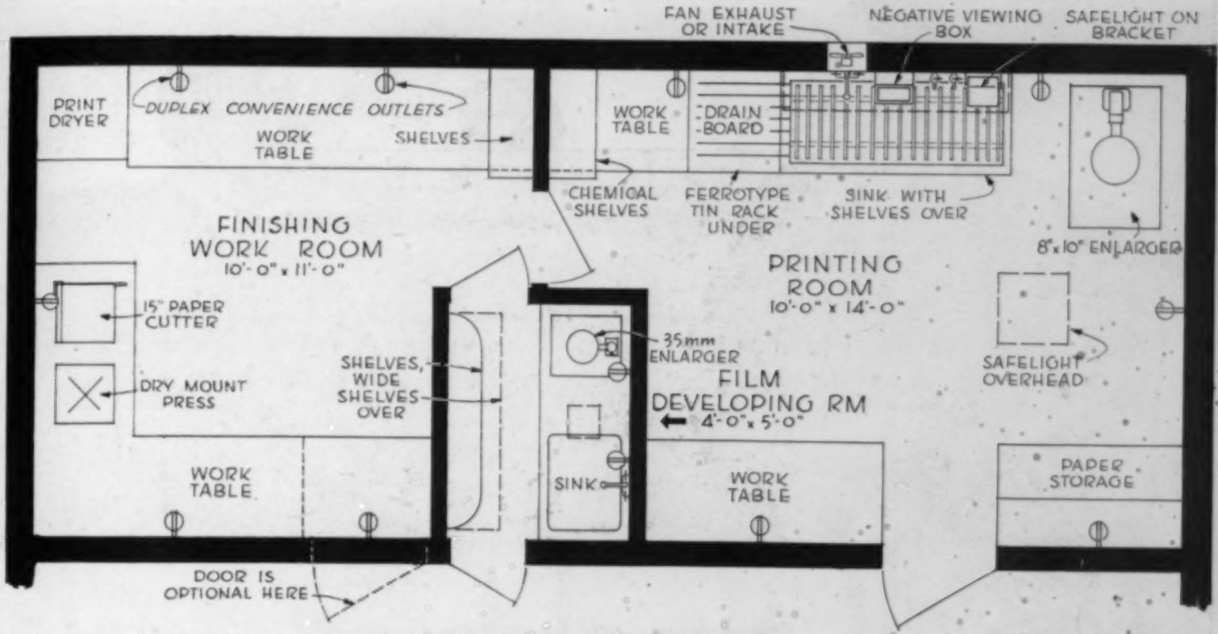
IT'S EASY TO SEE WHEN IT'S

DAY-BRITE

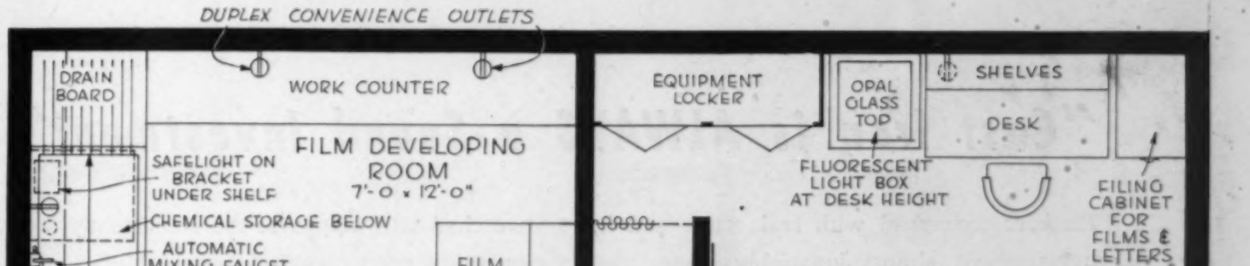
Lighting

DARKROOMS: ADVANCED

(Continued on page 131)


FAN EXHAUST OR INTAKE
NEGATIVE VIEWING BOX
SAFELIGHT ON BRACKET
PRINT DRYER
DUPLEX CONVENIENCE OUTLETS
WORK TABLE
SHELVES
WORK TABLE
DRAIN BOARD
CHEMICAL SHELVES
FERROTYPE TIN RACK UNDER
SINK WITH SHELVES OVER
8"x10" ENLARGER
FINISHING WORK ROOM 10'-0" x 11'-0"
PRINTING ROOM 10'-0" x 14'-0"
15" PAPER CUTTER
35mm ENLARGER
SAFELIGHT OVERHEAD
SHELVES, WIDE SHELVES OVER
FILM DEVELOPING RM 4'-0" x 5'-0"
DRY MOUNT PRESS
SINK
WORK TABLE
WORK TABLE
PAPER STORAGE
DOOR IS OPTIONAL HERE

Advanced Amateur — Small Professional Workshop. Planned by Willard D. Morgan


DUPLEX CONVENIENCE OUTLETS
DRAIN BOARD
WORK COUNTER
EQUIPMENT LOCKER
OPAL GLASS TOP
SHELVES
DESK
FILM DEVELOPING ROOM 7'-0 x 12'-0"
SAFELIGHT ON BRACKET UNDER SHELF
FLUORESCENT LIGHT BOX AT DESK HEIGHT
FILING CABINET FOR FILMS & LETTERS
CHEMICAL STORAGE BELOW
AUTOMATIC MIXING FAUCET
FILM DRYER
SINK
GRADUATES
SAFELIGHT
WASTEBASKET
CORK BOARD FOR DISPLAYS, ETC
LIGHT TRAP
LIGHT-TIGHT PASS DOORS
SCALE
CHEMICAL MIXING (STORAGE BELOW)
FERROTYPE WRINGER
CLOTH TRAYS FOR DRYING PRINTS
FINISHING WORK ROOM 13'-0" x 18'-0"
FERROTYPE RACKS, TRAY AND CHEMICAL STORAGE BELOW
PRINT DRYER
AUTOMATIC MIXING FAUCET
PRINTING ROOM 11'-0" x 12'-0"
PAPER CUTTER
MISCELLANEOUS PHOTO EQUIPMENT
SINK
GRADUATES AND SAFELIGHTS ON BRACKETS UNDER SHELF
WORK TABLE
COPYING AND SMALL SET-UP WORK
SAFELIGHT
SPOTTING EASEL
8"x10" ENLARGER
MIXING FAUCET
4"x5" OR SMALLER ENLARGER
DRY MOUNT PRESS
WASTE-BASKET
SEPARATE 20 Amp. CIRCUIT

Professional Workshop. Planned by Willard D. Morgan

Approx. scale: 1/4" = 1'

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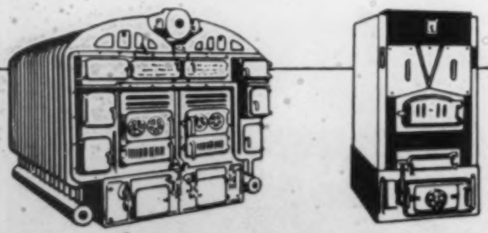


H.B. Smith

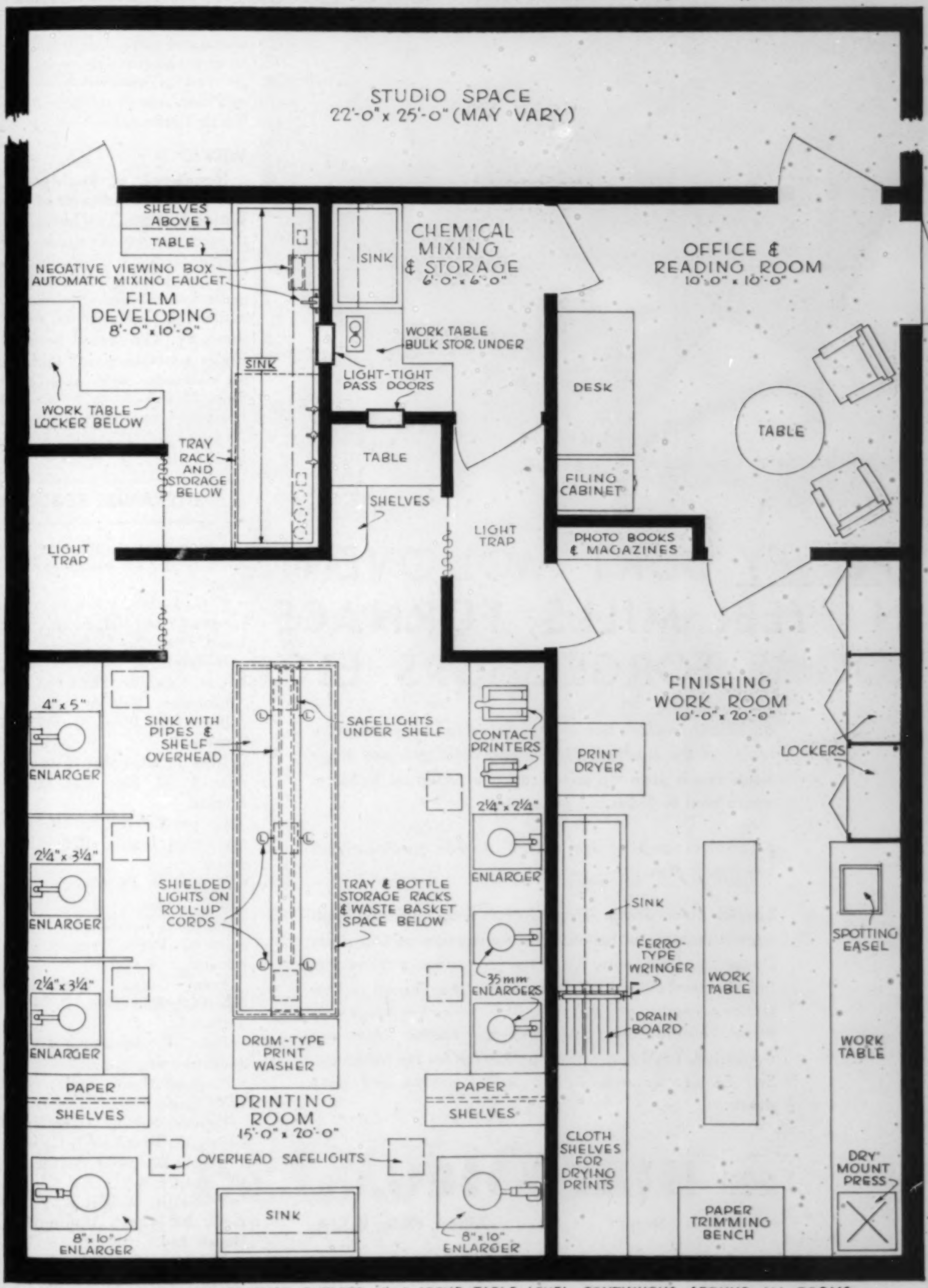
CAST-IRON BOILERS

THE H. B. SMITH CO., INC., WESTFIELD, MASS. Offices and Representatives in Principal Cities

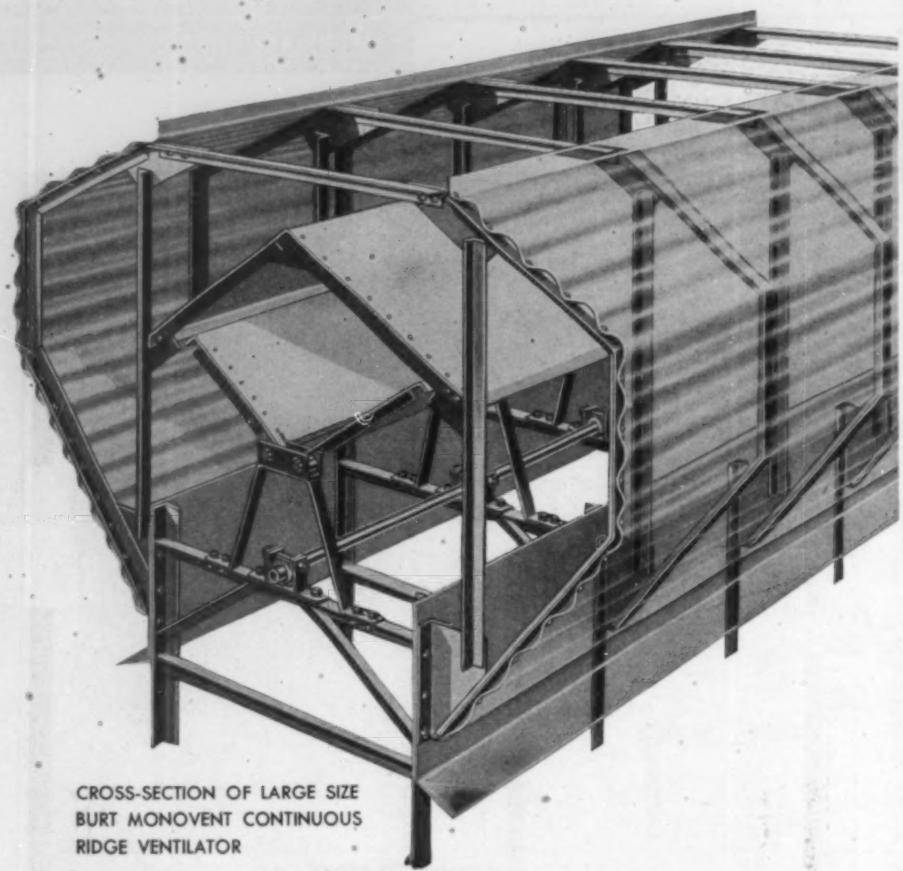
DARKROOMS: COMMUNITY

Community Center Photo Workshop. Planned for groups of 12–15 by Willard D. Morgan

Approx. scale: ¼" = 1'


STUDIO SPACE
22'-0" x 25'-0" (MAY VARY)
SHELVES ABOVE
TABLE
NEGATIVE VIEWING BOX
AUTOMATIC MIXING FAUCET
FILM DEVELOPING
8'-0" x 10'-0"
SINK
WORK TABLE LOCKER BELOW
TRAY RACK AND STORAGE BELOW
LIGHT TRAP
SINK
CHEMICAL MIXING & STORAGE
6'-0" x 6'-0"
WORK TABLE BULK STOR. UNDER
LIGHT-TIGHT PASS DOORS
TABLE
SHELVES
LIGHT TRAP
OFFICE & READING ROOM
10'-0" x 10'-0"
DESK
TABLE
FILING CABINET
PHOTO BOOKS & MAGAZINES
FINISHING WORK ROOM
10'-0" x 20'-0"
LOCKERS
PRINT DRYER
SINK
FERRO-TYPE WRINGER
DRAIN BOARD
WORK TABLE
SPOTTING EASEL
WORK TABLE
CLOTH SHELVES FOR DRYING PRINTS
PAPER TRIMMING BENCH
DRY MOUNT PRESS
4" x 5"
ENLARGER
2¼" x 3¼"
ENLARGER
2¼" x 3¼"
ENLARGER
SINK WITH PIPES & SHELF OVERHEAD
SAFELIGHTS UNDER SHELF
SHIELDED LIGHTS ON ROLL-UP CORDS
TRAY & BOTTLE STORAGE RACKS & WASTE BASKET SPACE BELOW
CONTACT PRINTERS
2¼" x 2¼"
ENLARGER
35mm ENLARGERS
DRUM-TYPE PRINT WASHER
PAPER SHELVES
PAPER SHELVES
PRINTING ROOM
15'-0" x 20'-0"
OVERHEAD SAFELIGHTS
SINK
8" x 10" ENLARGER
8" x 10" ENLARGER

NOTE – STRIP-TYPE CONVENIENCE OUTLETS, 1'-0" ABOVE TABLE LEVEL, CONTINUOUS AROUND ALL ROOMS. SEPARATE FUSES FOR 8" x 10" ENLARGERS, PRINT DRYER AND DRY MOUNT PRESS.



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RIDGE VENTILATOR

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Because it functions like a gigantic valve along the entire length of the structure, BURT Monovent Continuous Ridge Ventilator is your top specification in industrial buildings where heat or fumes are generated.

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Special BURT design brace frames and carefully engineered sheet metal fastening assure strength and long life. Dampers, of the center hinge butterfly type, combine with the Monovent's fixed top, to form the cone-shaped airflow section proved so efficient in the BURT Free-Flow round ventilator. Numerous air passes, with their friction losses, are eliminated. You'll find many applications for the Monovent. See Sweet's or write — now — for catalog and data sheets.

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MANUFACTURERS OF VENTILATORS, LOUVERS, OIL FILTERS, EXHAUST HEADS AND SHEET METAL SPECIALTY PRODUCTS

(Continued from page 126)

dimensions and list prices of Y-type and type T strainers, large pipe line strainers for water or oil service, horizontal and vertical separators for steam, air or gas service and receiver separators for various installation conditions. 16 pp., illus. American District Steam Co., North Tonawanda, N. Y.

WIRING

Handbook of Residential Wiring Design and **Handbook of Farmstead Wiring Design.** Two booklets on wiring to meet the specific needs of the home and the farm. Each includes floorplans, a list of electrical symbols and definitions, general and special requirements, outlet and circuit requirements, and a tabular summary. The second booklet also includes a section giving tables and data on demands, wire sizes and voltage drop. 24 and 56 pp., respectively, illus. Industry Committee on Interior Wiring Design, Room 2650, 420 Lexington Ave., New York 17, N. Y.

LITERATURE REQUESTED

The following individuals and firms have requested manufacturers' literature:

F. G. Ascher, A.I.A.A., Architect and Licensed Land Valuer, 16, Saadya Gaon Road, Jerusalem-Rehavia, Palestine.

Building & Manufacturing, Ryan House, Eagle St., Brisbane, Australia.

Cameron, Murray and Fairfield, Architects, 128 Bloor St. West, Toronto, Canada.

Jules P. Channing, Consulting Engineer, P. O. Box 572, Miami Beach, Florida.

Cooper & Perry, Architects and Engineers, 204 Journal Bldg., Knoxville 8, Tenn.

Walter W. De Cherrie & Associates, 180 W. Washington St., Chicago 2, Ill.

James C. Gardiner & Associates, Architects, Puget Sound Bank Bldg., Tacoma 2, Wash.

Frank Gibson, Architect, McCaysville City Hall Bldg., P. O. Copperhill, Tenn.

Jesse T. Johnson, Architect, 713 Sycamore St., Columbus, Ind.

Nashaat Morsy, Architect, P. O. Box 1731, Cairo, Egypt.

Palmer Sabin, Architect, 1009 E. Green St., Pasadena 1, Calif.

Robert I. Upshur, Architect, 4 Loring Pl., Sumter, S. C.

Vonnegut, Wright & Yeager, Architects, 402 Opera House Bldg., Terre Haute, Ind.

Wright and Selby, Architects and Engineers, 211a Hightower Bldg., Oklahoma City, Okla.

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Be sure to specify wire or cable insulated with GEON in order to get *all* these advantages. Or, for information regarding special applications please write Department A-9, B. F. Goodrich Chemical Company, Rose Bulding, Cleveland 15, Ohio.

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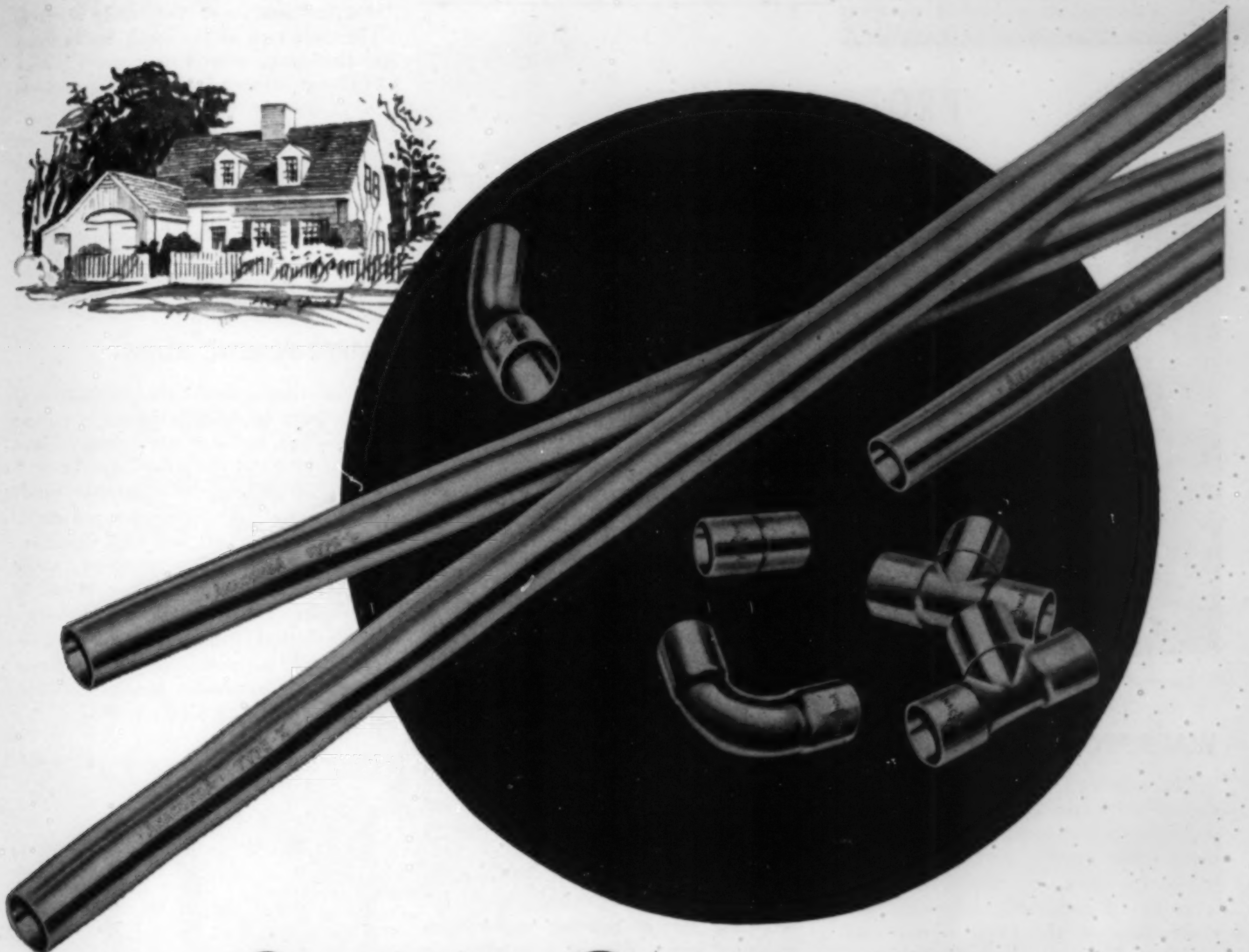

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IF YOUR CLIENTS could have copper plumbing at little or no more than the cost of a rustable installation which would they choose? Today they can have just that by using Anaconda Copper Tubes, Type K or L, with Solder-Type Fittings.

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Because of the excellent performance records of Anaconda Copper Tubes for water lines, they are gaining wide acceptance for forced circulation hot water heating, and also for lawn sprinkler systems, tank-to-oil-burner, bottled gas and other connections. Detailed information is available in Publications B-1 and C-2. Write for a copy of each.

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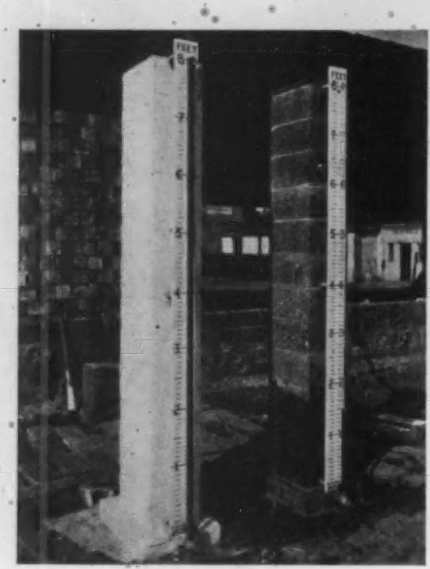


Treated cinder block resists seepage

WATERPROOFING

The resistance to moisture and seepage afforded to masonry by *Aquella* waterproofing compound has been demonstrated by the manufacturer in a series of waterproofing tests conducted before a group of architects, engineers, and contractors at the Long Island City plant of National Brick Corporation. Two test towers, made of highly porous cinder concrete blocks were constructed, with the absorption rate of the blocks predetermined as being from 22 to 25 per cent by weight. The column, shown above on the left, was treated with Aquella, while the one on the right was not. The Aquellized tower was filled with water to a height of 8 ft., equivalent to a hydrostatic pressure of about 500 lb. per sq. ft. at the base. The un-Aquellized tower could not be filled higher than 18¾ in. because water seeped through at a rate of 2 gal. per minute. These test conditions are said to be 50 times more severe than that prescribed by the U. S. Bureau of Standards, which calls only for a maximum 2 in. head of water, or 10-lb. pressure per sq. ft. Aquella Products, Inc., Richmond Hill, New York.

TOUGH FLOORING

During the war *Nairn Marine Deck Covering* was developed for shipboard use to provide a fire-retardant resilient deck surface that would withstand rough usage and the intense heat of possible fire between decks. It gives off no combustible smoke or fumes at temperatures corresponding to red or white hot steel, approximately 2000° F. Now available for civilian use in three colors, green, terra cotta, and gray, this linoleum is said to offer a number of advantages for use under conditions where an attractive floor covering that will take abuse is needed — in public corridors, elevator cabs, bars, motion picture booths and laboratories: it is not surface-marred by burning cigarettes; resists stains, wear, and alkali cleaners; and is less slippery than conventional linoleum. Congoleum-Nairn, Inc., Kearny, N. J.

WARM-TONE FLUORESCENT

Introduced last year in 40-watt and 100-watt size fluorescent lamps, the new 4500-white color is now available in a full line of fluorescent lamps, from 6-watt to 100-watt sizes, and in all four sizes of Slimline fluorescent lamps. The new color has characteristics which are a balance between white and daylight colors, lighting engineers at Nela Park say. The color is described as being sufficiently near daylight to meet ordinary needs for color discrimination, and at the same time, warm enough in tone to be pleasing for indoor illumination. Colors of most materials will appear more natural under the 4500-white lamp, appropriate for all lighting applications including home, office, store, and industrial uses. General Electric Company, Nela Park, Cleveland, Ohio.

INSULATING GLASS

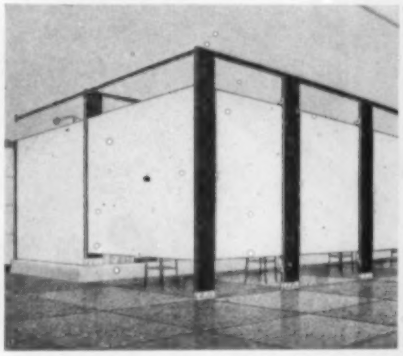
Soon to be available in standard window sizes is *Thermopane*, the double-glazed windowpane consisting of two panes of polished plate glass with a dehydrated and sealed-in air space between. The sizes are standard for picture windows, double-hung wood sash, and residential steel casement windows, based upon American Standards Association data for modular window construction. Glass distributors, as well as sash and door manufacturers, will in time carry these standard sizes in their warehouse stocks. Sash and door jobbers will stock window frames designed for this type of windowpane as well as glass units for immediate service. Libbey-Owens-Ford Glass Company, Toledo 3, Ohio.

FLOOR ARMOR

Many industries require a heavy-duty surface armor for floors in shops, mills, freight terminals, loading docks, platforms, and bridges. Produced for this purpose, *Hexteel* is a heavy-duty steel grid designed to be embedded in concrete, mastic, or any plastic floor material to provide a solid, one-piece, rigid, and seamless mat over the entire surface. The steel tops of the mesh are exposed so that truck wheels may move in any direction without leaving the steel bearing surface. Dropping of heavy materials leaves the flooring unaffected. *Hexteel* comes in standard units, 3 ft. by 10 ft., 12- and 14-gauge thickness, and in ¾-in., 1-in., and 1¼-in. depths, for new floors and the repair of broken or crumbling spots in existing flooring. Wm. F. Klemp Company, 6601 S. Melvina Ave., Chicago 38, Ill.

PAPER-PLASTIC RUGS

Some time in the future, plastic-treated paper rugs may find wide use in patios, sunporches, and summer cottages where formality is not the rule. Paper twine is coated with a flexible plastic called *vinyl butyral* and then woven on standard mill equipment into rugs that have improved resistance to water, wear, skidding, mildew, and fading. It will be possible to wipe stains from them with a damp cloth. For decorative effects weavers can use pigments permanently incorporated in the plastic. Monsanto Chemical Company, St. Louis 4, Mo.

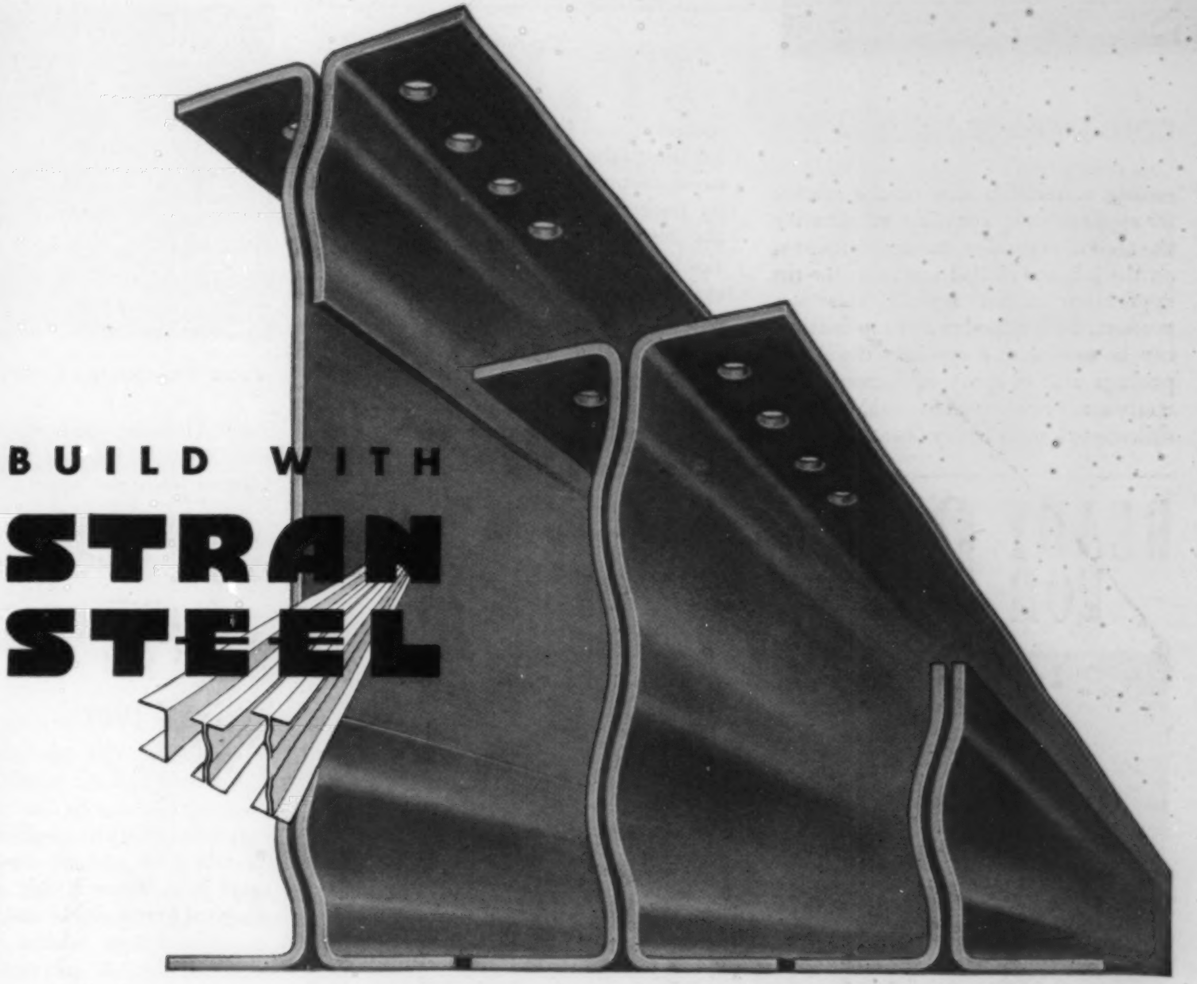


Private showers and dressing rooms

SHOWER UNITS

Shower stall compartments are now being made of *Porcena*, a porcelain-on-steel product with a vitreous enamel finish said to be scratch-resistant and resistant to blows because of the high degree of elasticity offered by glass and sheet steel, with a hard smooth surface which is easy to clean and discourages defacement. Shower stalls are available with or without dressing room compartments in as many units as desired. Installations are usually composed of compartments 3 ft. sq., but are available in any size that complies with the modular system of dimensional coordination. Doors are usually furnished for the entrance to the dressing room compartment and the opening between shower stall compartment and the dressing room is customarily equipped with a white duck curtain. Sanymetal Products Co., Inc., 1705 Urbana Rd., Cleveland 12, Ohio.

(*Continued on page 138*)



THE LIGHTWEIGHT STEEL FRAMING THAT GOES UP FAST

Stran-Steel's fast, efficient erection method appeals to both architects and builders. Studs, joists and channel plates are laid out on the ground and joined with self-threading screws to form a section of convenient handling size; then the whole is raised and secured in place. Other building materials are later attached directly to the frame with hammer and nails. No special tools or equipment is required.

Stran-Steel provides a fire-safe, rigid, long-lasting frame that assures low maintenance costs. It is a material of precision and uniform quality, free from such variations as are caused by growth, seasoning or "greenness." The patented *nailing* groove grips nails more securely than wood does.

Get the full story of this economical, *fast-erecting* framing system. See Sweet's File, Architectural, Sweet's File for Builders, or the January issue of Building Supply News.

GREAT LAKES STEEL CORPORATION

Stran-Steel Division • Penobscot Building, Detroit 26, Michigan
UNIT OF NATIONAL STEEL CORPORATION

YOU NAIL TO
STRAN STEEL

(*Continued from page 136*)

COLD-SPRAY ROOF COATING

A cold-process adhesive and built-up roofing material is now on the market for application by spraying. Eliminating the need of expensive heating equipment on the job and skilled workmen for the application of hot asphalt, this new product, both adhesive and top coating, can be used with a specially developed package unit of spray equipment. Formerly spray equipment available was too delicate to handle heavy fibrated roofing materials, and the materials themselves, too unsuitable for spray application, because coatings thus produced were heavily pockmarked or "orange peeled" by the impact of the spray. These difficulties have been overcome through development of special spraying equipment and new cold-process products especially engineered for spray application. The following advantages are announced: (1) faster application; (2) improved workmanship through more uniform coatings; (3) easier application on inaccessible areas; (4) rapid dampproofing of parapet walls and coating of metal surfaces adjacent to roof areas; (5) tighter bond because of impact effect of spray; and (6) more effective merchandising by roofers through convenience and neatness of method. The Flintkote Company, Inc., 30 Rockefeller Plaza, New York 20, N. Y.

Faster roof-coating by cold-spray method

HEATING UNIT

Combining the advantages of convected and radiant heating, the *Trane Convector-radiator* has been so simplified that it can easily be specified and ordered directly from jobbers' stock for large or small jobs. There is only one model, so designed that it can be installed either as an exposed floor cabinet or as a semi-recessed unit. A universal header has been developed which permits either top or bottom connections at each end. It is said to be suitable for any gravity or forced hot water system or any two-pipe steam system. The complete line consists of 57 sizes in three standard depths and lengths with capacities ranging from 16 to 100 sq. ft. The Trane Company, La Crosse, Wisc.

ELEVATOR GUIDES

Savings in current consumption and maintenance costs of 24 to 44 per cent are claimed for the *Elsco Safety Roller Guide* for elevators, designed for new installations or as a replacement for the old slipper-type sliding shoes. This guide contacts the guide rail with rollers mounted on compensating arms designed to yield automatically under varying conditions of use and yet maintain constant contact. Elimination of friction results in savings in maintenance and current, and eliminates greasing of the rails, thereby reducing the fire hazard within the shaftway. A stabilizing spring suspension eliminates rail joint knocks and absorbs rail inequalities, giving a smooth, gliding ride. The roller guide has been approved by the Bureau of Standards and Appeals of the City of New York for use up to 1200 ft. per minute. Elevator Safety Corporation, 165 Broadway, New York, N. Y.

(*Continued on page 140*)

READY FOR BLACK LIGHT?

Portion of GLO-CRAFT fluorescen mural in a leading mid-west theatre

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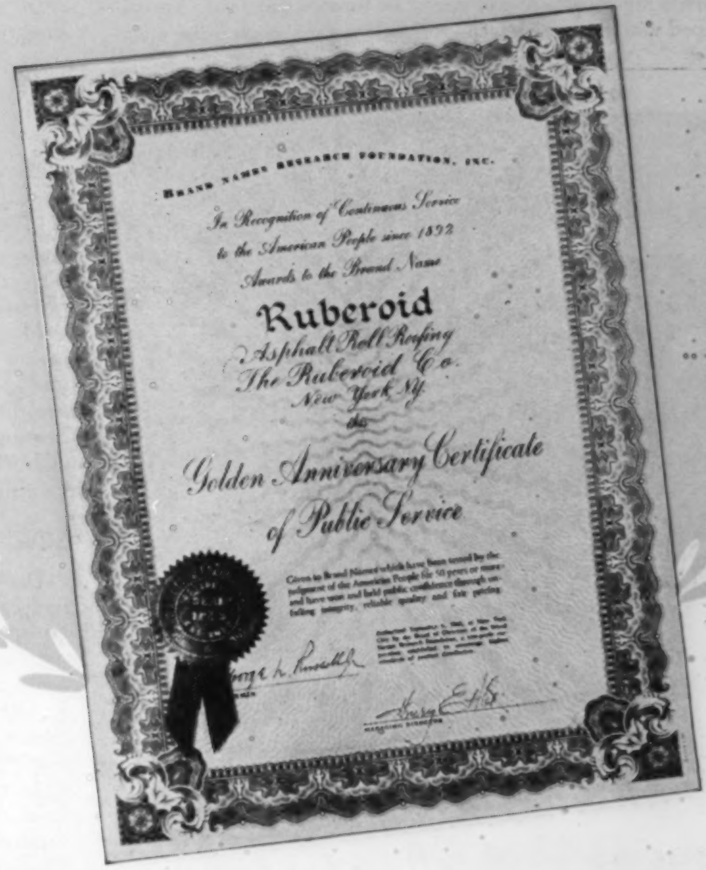

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RUBEROID

The RUBEROID Co., Executive Offices: 500 Fifth Ave., N. Y. 18, N. Y.

ASPHALT AND ASBESTOS BUILDING MATERIALS

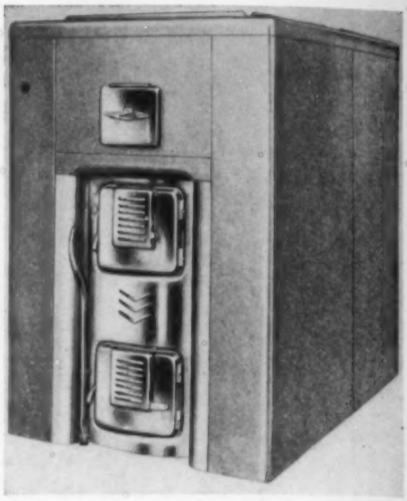
(*Continued from page 138*)

SHOWER DOORS

Aluminum frames for glass shower doors are now being sold by the manufacturer to hardware dealers, building supply houses, plumbers, glass companies, and venetian blind contractors, and shipped to them knocked-down (minus glass) in standard lengths. Two simple cuts allow the doors to be made in any width, 30 in. and under. Frame is pressure-set in non-deteriorating duo-rubber. Each door is equipped with anti-drip channel, which protects the floor from water when the door is open and insures rapid drainage of water into the shower stall. American Shower Door Company, Dept. AR, 1001 N. La Brea Ave., Los Angeles, Calif.

FORCED AIR FURNACE

War-developed processes account for many of the improvements in the *Super-steel* forced air furnace, made of "Torrid-steel," a 7-gauge steel chosen for durability and resistance to corrosion, coupled with quick heat response. Eighty-eight per cent of its joints are leakproof "submerged" welded, a new process that penetrates twice as deep as ordinary welding. A new "steel ring" radiator makes smoke and gases travel farther, and speeds up heating. The new furnace design has up to 21 per cent greater heating surface than the average furnace. Kalamazoo Stove and Furnace Co., Rochester Ave., Kalamazoo, Mich.



Furnace features larger heating surface

SOIL TESTER

Damage wrought by electrolysis upon underground pipelines, water supply systems, utility services, and communications often can be avoided if it is anticipated and protective measures are taken. A *Soil Resistivity Meter Model 243* has been developed for quick and easy soil readings, in a radius of approximately 12 in. of prod tip, inserted to any desired level. Tiresome cranking is eliminated through a self-contained power source. The meter is lightweight and comes equipped with a comfortable webbed strapping harness for carrying. Associated Research, Inc., 231 South Green St., Chicago 7, Ill.

PRE-CAST CONCRETE

A new concrete-base material, *Modern Crete*, is now in first stages of production. By a patented process, this material is produced in block form, weighing approximately one-third that of an equal amount of concrete. According to the manufacturer, it can be nailed near its edge without cracking or chipping, and can be sawed to size at the construction site: a factory-controlled process permits its bending to desired specifications. In addition it is said to have a positive thermal insulation quality, and to be proof against termite-attack. Schaaf Pre-Cast Concrete Company, G-5522 North Dort Highway, Flint, Mich.

(*Continued on page 142*)

The WALDORF-ASTORIA installs draperies that *CANNOT BURN*

STARLIGHT ROOF

This fabulous dining and dancing spot in the Waldorf-Astoria reflects a new mood of restrained elegance. Shimmering festoons of lustrous, coral toned Fiberglas* contrast with the stark white rococo cornices—provide the exactly right background for carefree entertainment. *Decorated by W. & J. Sloane, Contract Division, New York.*

FIBERGLAS* Listed by Underwriters' Laboratories, Inc., as "Non-Combustible Fabric;" approved by the Bureau of Standards and Appeals, City of New York.

Breathtaking beauty is the keynote of the new Starlight Roof decorative scheme. But more important from a customer standpoint is the fact that these dramatically lovely draperies can help prevent loss of life if a fire should start. For Fiberglas* fabrics are non-combustible—woven entirely of finely spun glass filaments, they never require flameproofing. *Always operate at 100% efficiency.* Endorsed by public safety officials here and abroad for use in all places of public assembly. Now available in luxuriously designed prints and handsome solid colors for theatres, night spots, restaurants, school auditoriums. *See list of sales offices below.*

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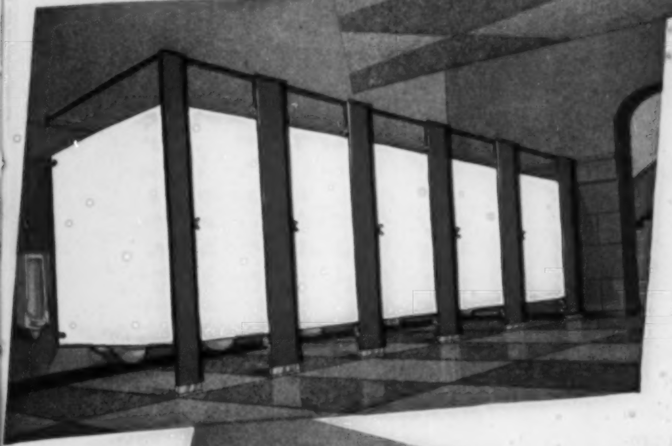
* T. M. Reg. U. S. Pat. Off. Owens-Corning Fiberglas Corporation

A Toilet Room Environment is More Vulnerable to Obsolescence than its Utility

SanymetalCentury Type Ceiling Hung Toilet Compartments are particularly appropriate for schools. They impart dignity, refinement, and cheerfulness to the toilet room environment.



Sanymetal Porcena Academy Type Toilet Compartments satisfy architects who desire a conservative but modern toilet room environmental treatment.

*Sanymetal**

"PORCENA"

(Porcelain on Steel) TOILET COMPARTMENTS

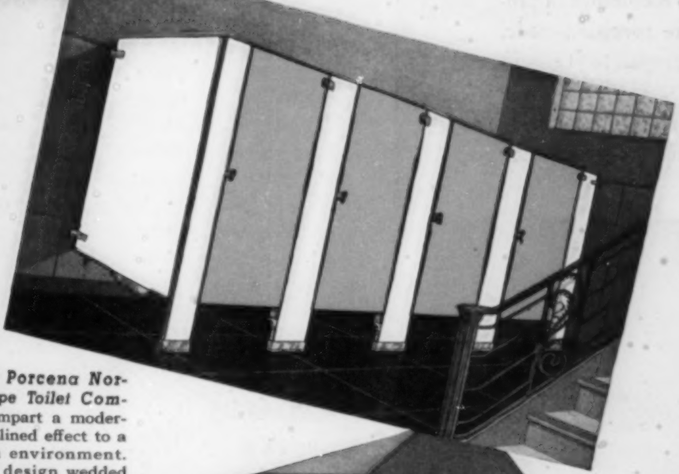
possess the natural structural strength of steel, not one sheet, but two 16-gauge sheets securely bonded on opposite sides of dense insulating core, strengthened by porcelain enamel (four layers on each sheet) which provides a non-porous, flint-hard, glass-smooth surface that is positively impervious to odors, acids and moisture.

● Obsolescence in buildings that are being planned today for tomorrow is likely to occur in more places on the inside of those buildings than in their exterior treatment and construction. There is one environment you can protect against premature obsolescence—the toilet room environment. Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments provide a generous measure of protection because of these features: modernity and beauty, fadeless, harmonious color combinations, and construction of the ageless and fadeless material—Sanymetal "PORCENA" (porcelain on steel).

Toilet room environments impress more persons favorably or unfavorably than any other single environment within a building. Toilet compartments usually dominate a toilet room and influence the toilet room environment. Install Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments and win the favorable comment of tenants or students or customers or employees. These toilet compartments embody features the importance of which are usually unappreciated and, therefore, often neglected by those of less experience. Made of the ageless, fadeless material, porcelain on steel, Sanymetal "PORCENA" Toilet Compartments are available in a wide range of beautiful never-fade colors imbedded deep into a glass-smooth, flint-hard, non-porous surface that cleans easily, is moisture and rust proof, and always looks new.

Sanymetal "PORCENA" Toilet Compartments embody the results of over 32 years of specialized skill and experience in making more than 70,000 toilet compartment installations. Ask the Sanymetal Representative in your vicinity (see "Partitions" in phone book) for helpful suggestions on planning modern toilet room environments. Refer to Sanymetal Catalog 19-B5 in Sweet's Architectural File for 1946 or write for file copy of Catalog 84.

THE SANYMETAL PRODUCTS COMPANY, INC.
1689 URBANA ROAD • CLEVELAND 12, OHIO



Sanymetal Porcena Normandie Type Toilet Compartments impart a moderately streamlined effect to a toilet room environment. Streamlined design wedded to utility fulfills all requirements.

Sanymetal Catalog 84 illustrates several typical toilet room environments as well as shower stall and dressing room suggestions.

Sanymetal
toilet compartments

Sanymetal Porcena Academy Type Shower Stall and Dressing Room Compartments provide the utmost in sanitation for gymnasiums and dormitories.

Sanymetal*

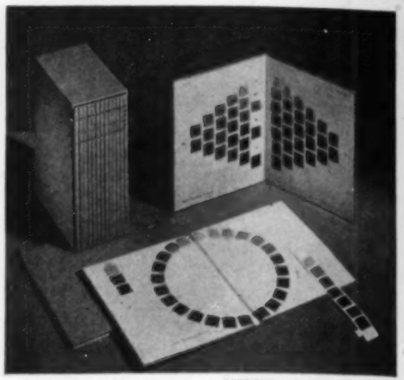
*Trade Mark Reg. U. S. Pat. Off.

TOILET COMPARTMENTS, SHOWER STALLS AND DRESSING ROOMS

(Continued from page 140)

COLOR GUIDE

A new "Large Chip" edition has been brought out to supplement the original Color Harmony Manual published in 1942. The new edition provides color chips that are one inch square plus a tab, with two and one-half times more working area than the chips in the first edition. This permits increased speed in visual impression, and greater ease in color matching. The Color Harmony Manual was originally published to reduce the problem of color harmonizing almost to a mathematical formula. It consists of a set of 13 volumes containing 680 movable color chips, and the Color Harmony Index, a set of mechanical indexes, which makes the same 680 colors available for comparison. Chips are dull on one side and shiny on the other so that unknown colors can readily be compared to them. A new feature is a work chart in which the chips may be arranged for study in circular or linear series. The text also has been revised. Container Corporation of America, 111 West Washington St., Chicago, Ill.



HEDRICH-BLESSING Photo

680 color chips for color harmony study

CLEANING BLUEPRINT ROLLS

The cleaning of blueprint duplicating machine rolls by hand-scraping or sanding can prove tedious work. An electrically-powered wire-brush proves a great time-saver in removing crystalline substances that form on the rolls. Brushes come in two types: .005-in. wire for normal cleaning, and .0095-in. wire for removing heavier coating. Brush Division, The Osborn Manufacturing Company, 5401 Hamilton Ave., Cleveland, Ohio.

GREASE CATCHER

A new grease interceptor of compact design can be used in places where ordinary grease interceptors are too high to install without being recessed in the floor. This unit, when installed in the drainage lines of sinks and dishwashers of restaurants, soda fountains, and cafeterias, intercepts grease by the flotation principle. The intercepting chamber can be removed readily for easy cleaning. Units are made in cast iron or stainless steel, and can be furnished with anchorage flange or seepage pan, when so specified. J. A. Zurn Mfg. Co., Erie, Pa.

STANDARDS

Welding

A 1946 edition of the Standard Code for Arc and Gas Welding in Building Construction has been published to replace the 1941 (tentative) edition. The new edition embodies revisions based on research and on recent applications of welding to structural fabrication. The section on design now provides for increased allowable weld unit stresses equal to those allowed for the steel being welded. Other sections on filler metal, workmanship, inspection, and qualification of welding operators and procedures have also been revised. American Welding Society, 33 West 39th St., New York 18, N. Y. 50 cents.

(Continued on page 160)

Create More *Visible Value*...

IN HOMES ★ HOSPITALS ★ STORES ★ HOTELS ★ THEATRES

with **KIN-TRIM** *Essential* METAL MOULDINGS

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KINTRIM affords you greater freedom in modern, sweeping design . . . and gains recognition for your creativeness by adding "*visible value*" to your interiors. For KINTRIM—the lustrous metal mouldings of *enduring beauty*—has the structural precision *you need* and want for more attractive, practical use of colorful, serviceable coverings. Indeed, wherever you install linoleum, wall- and floor-coverings, KINTRIM smartly enriches and accents the beauty of your design.

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FACING for Counter and Table-Tops, Shelves, Cabinets, Sinks
CAP and COVE for Counters, Sinks, Wall-Coverings

Let KINTRIM beauty and utility serve you as *the finishing touch* that adds more "visible value." Address us, Dept. 9R, for reprint of KINTRIM section, Architects' File, 1946 Sweet's Catalog.

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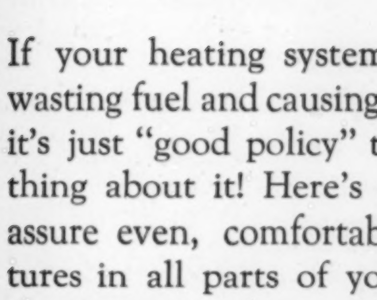


The Webster Outdoor Thermostat, an element of the Webster Moderator System, automatically changes heating rate when outdoor temperature changes.

Fuel-Saving Starts With CONTROL

AUTOMATIC **Webster** Heating Systems

(Continued from page 18)

supply system, including outlets and fixed lights, a check-list of electrical appliances, an explanation of the principles of good lighting.

2. "Insulation" (Circular Series No. F6.0), a discussion of home insulation, giving pertinent facts, reasons for insulating the home, and including a table showing reductions in the fuel bill possible in eight types of construction for one- or two-story homes.

3. "Interior Decoration" (Circular Series No. H1.0), hints for arrangement of furniture, choice of color, style combinations, etc., in home decorating.

Copies of all three pamphlets may be obtained gratis from the Small Homes Council, University of Illinois, Urbana-Champaign, Ill.

Extension Courses

The Extension Division, University of Wisconsin, Madison, Wis., through its department of civil and structural engineering, is now offering two revised correspondence-study courses in mechanics for engineers, mainly for qualified students not currently attending schools of engineering. The aim of each is to afford a preparation in the principles of the subject and in their application to engineering problems. The courses are Mechanics 1a (statics) and Mechanics 2 (dynamics). Each embodies 24 assignments and allows three credits toward a degree in any branch of engineering. These credits are accepted by most institutions of higher learning.

Courses Reoriented

General reorientation of the landscape architecture field at Michigan State College is being undertaken by Harold W. Lautner, new head of the department, and formerly of the department of city and regional planning, Graduate School of Design, Harvard University. A broad program is being mapped for strengthening all courses in design and construction on a high professional level with emphasis aimed at techniques in keeping with progress in modern architecture, urban development and landscape architecture.

The point of view of space planning in functional design in these fields, as reflected in the work of the best modern designers, is being incorporated into the revamped courses and schedules. Commencing with the fall term, intensified work will be given in the functional esthetic approach.

Assistants in the department will be Charles Barr and Carl Gerlach, both formerly of Massachusetts State College, and Milton Baron of the Graduate School of Design, Harvard University.

HOUSING CONFERENCE

The first workshop conference on cooperative housing was held at Massachusetts State College, Amherst, July 28 to August 3. The project was designed to provide assistance to 50 groups, about half of them veterans, which have appealed to Eastern Cooperative League for help. Speakers included Dorothy Rosenman, president, National Committee on Housing, and John Jessup, project services advisor, FPHA.

COMING EVENTS

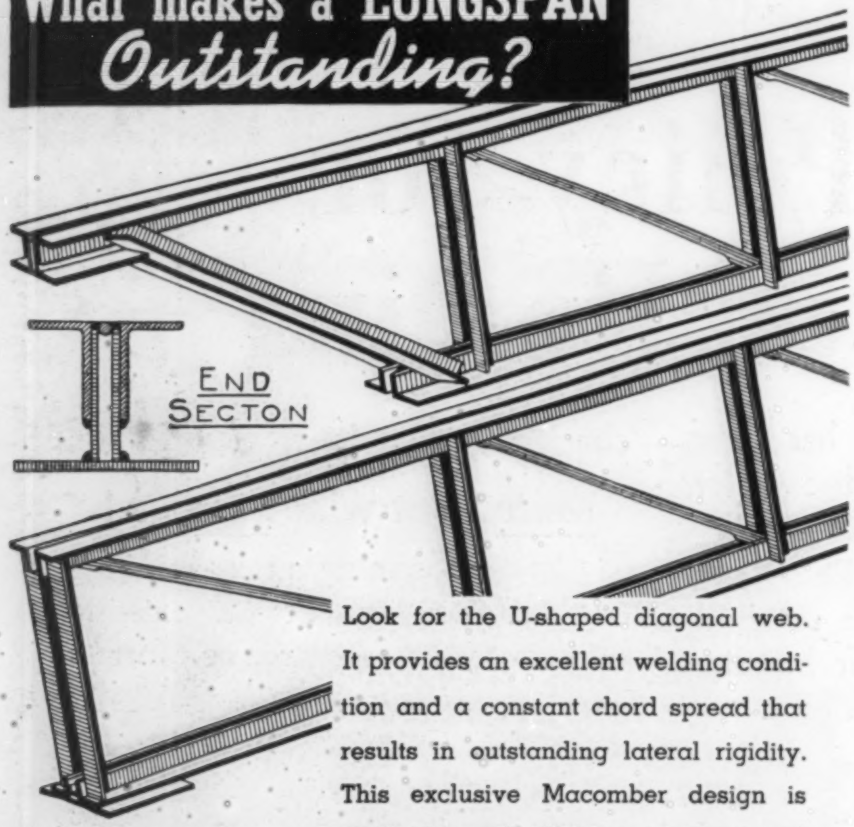
September 30 to October 3: 48th Annual Convention, American Hospital Association, Philadelphia, Pa.

October 7-11: National Exhibition of Gas Appliance Manufacturers and Annual Convention, American Gas Association, Atlantic City, N. J.

October 7-12: 18th International Congress for Housing and Town Planning, Hastings, Sussex, England.

November 11-16: 39th Annual Convention, National Association of Real Estate Boards, Atlantic City, N. J.

(*Continued on page 146*)



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Look for the U-shaped diagonal web. It provides an excellent welding condition and a constant chord spread that results in outstanding lateral rigidity. This exclusive Macomber design is made in underslung or square end types with sloping or parallel chords in lengths up to 70 feet. Here is a completely standardized structural unit, specified from load and span tables for unobstructed floor or roof support. Get our complete design information for your next project.

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New and distinctively different . . . lastingly lovely with a texture that's tough, yet yielding to touch. This is Duran, the miracle plastic upholstery . . . versatile, wear-defying and up-to-date as a glance at your watch. For interior planning from the decorously traditional to the ultra-modern, non-fabric backed Duran merits your highest recommendation. Superbly handsome with finely crafted finishes and rich colors – Duran gracefully expresses in interior styling the motif you plan to achieve. Incomparably distinctive as an upholstery material, Duran can be used on wall panelling, partitions, loges, and on any surface with decorative potentialities. Amazingly resilient, though tough and durable, Duran is easily applied without wrinkling or creasing. For every decorative effect from the gay vibrancy of a cocktail lounge to the subdued dignity of a library, make Duran the fitting touch to your finest creation. Write for full information on this sensational plastic, which for over a year has been demonstrating unsurpassed qualities in practical use by many architects, designers and decorators.

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The Masland Duraleather Company, 3236-3290 Amber Street, Philadelphia 34, Pa.

November 18–22: 28th Annual National Metal Congress and Exposition, Municipal Auditorium, Atlantic City, N. J.

December 2–7: 17th National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York City.

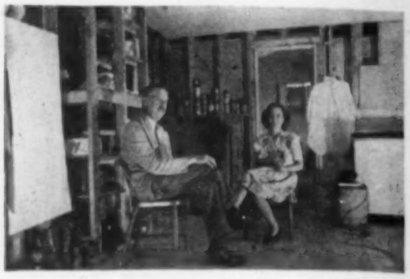
May 5–11, 1947: 2nd National Plastics Exposition and Annual Convention of The Society of the Plastics Industry, Coliseum, Chicago.

HANDBOOK DELAYED

Publication of the Illuminating Engineering Society's Lighting Handbook, originally scheduled for next month, has been postponed to October, 1947.

MEDAL AWARDED

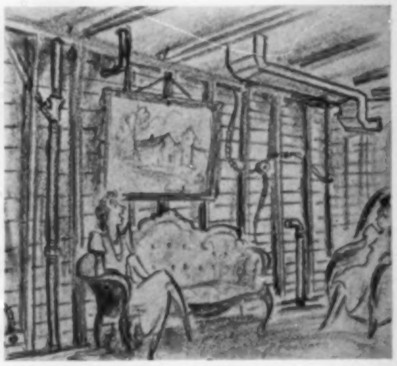
The I.E.S. Medal, given by the Illuminating Engineering Society in recognition of meritorious achievement in the lighting field has been awarded by action of the Society's Council to Eugene C. Crittenden, chief of the electrical division, National Bureau of Standards, Washington, D. C. Presentation will take place at the I.E.S. convention at Quebec this month.



Architect's home is like Dunn cartoon

CARTOON VIVIFIED

When cartoonist Alan Dunn drew the two women shown below chatting amid a mass of exposed studs, pipes, conduits and wiring (published in the RECORD in July, 1943), he little thought that one day his drawing would come to life. But architect Frederick H. Reimers has sent us the above photo showing how he and his wife "are living in a corner of their unfinished home in Piedmont, Calif., due to shortage of materials while they wait for someone to finish — anything." Architect Reimers and his wife probably are telling their visitors, as did the lady in the cartoon, "Perhaps I should explain that my architect believes in exploiting the natural characteristics of the materials."



OFFICE NOTES

Offices Opened, Reopened

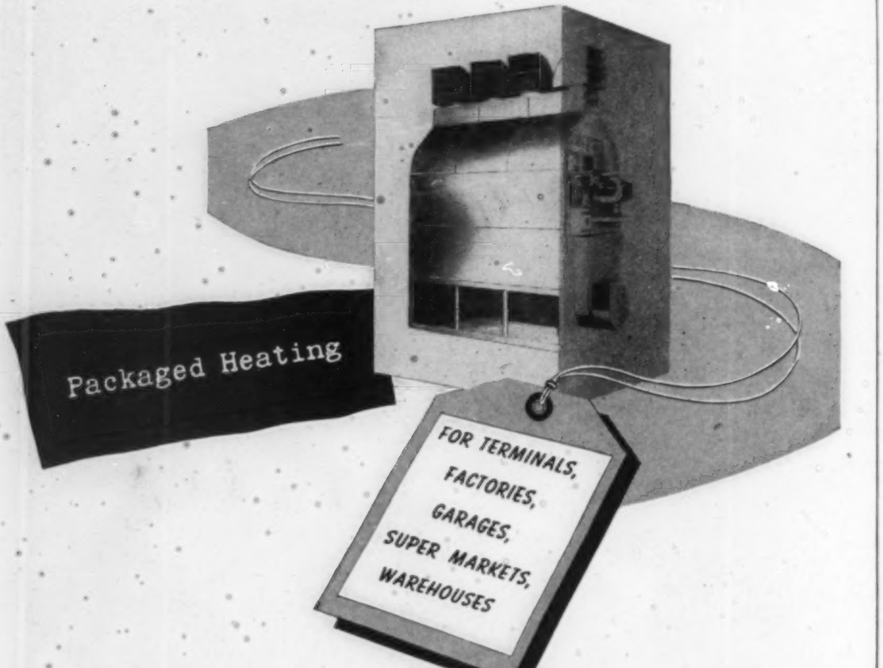
The American Institute of Steel Construction, Inc., has opened a district office at 1617 Pennsylvania Blvd., Room 542, Philadelphia 3, Penn.

Frank Gibson, Architect, has opened an office in the McCaysville City Hall Bldg., Copperhill, Tenn.

R. J. Graham, Structural Engineer, has reopened his offices at 343 S. Dearborn St., Chicago, Ill.

Howard R. Meyer, A.I.A., recently released from active duty as Major in the Corps of Engineers, AUS, has resumed his architectural practice with

(*Continued on page 148*)



The problem of providing heat for buildings containing large, unobstructed areas is economically and efficiently solved by the use of Dravo Direct Fired Warm Air Heating. This method provides self-contained heaters in sizes from 300,000 Btu to 2,000,000 Btu that can be used in single or multiple units.

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Dravo Heating is extremely flexible in use. Units can be moved as heat requirements change. Heat for office areas can be diverted by means of ductwork. If floor space is limited, Dravo Heaters can be suspended from wall or ceiling.

Pushbutton control eliminates specialized attendant. Maintenance is neglible. Gas or oil fired units provide fuel-to-air efficiencies of 80 to 85%.

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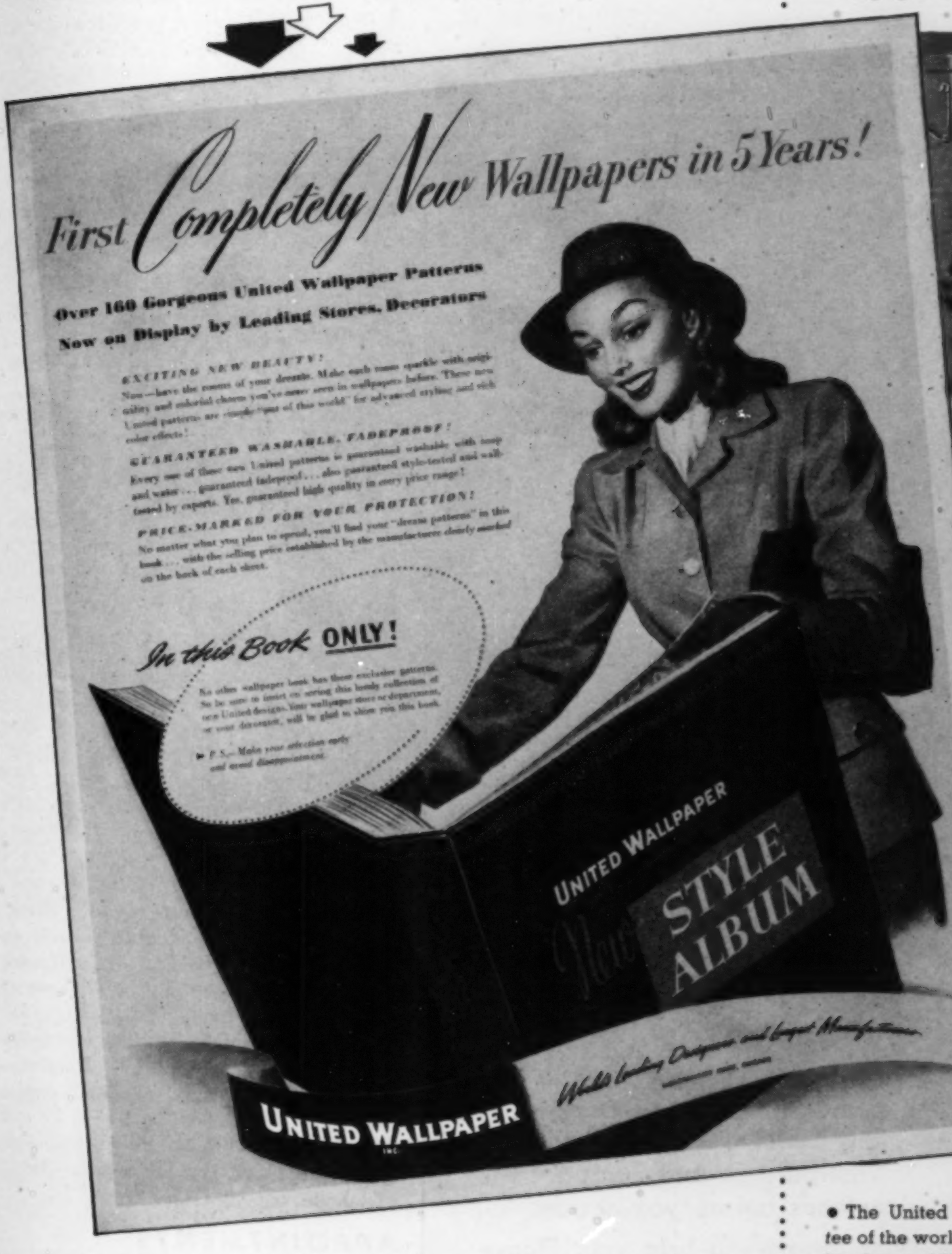
HEATING

The Dravo Heater has effected a new economy in open space heating. Let us point out its advantages on your next heating job. Bulletin 514 free on request. Dravo Corporation, 300 Penn Avenue, Pittsburgh 22, Pa.

Beautiful New Effects in Wallpapers

You'll soon see this color page in leading national magazines. To you it brings special good news! For it means that *highly styled wallpaper* is available *now* both for fine homes and for volume housing — as well as for commercial buildings of all types. These gorgeous new patterns include a wide choice of florals, stripes, weaves, and tones . . . many in *new* effects never before seen. See them in the *United Wallpaper Style Album* now at wallpaper stores everywhere.



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Remember, too, among wall-coverings *only wallpaper* combines design, color, originality, practicality and long life.

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Merchandise Mart, Chicago 54, Illinois offices at 2907 Maple Ave., Dallas 4, Texas.

Sylvester Leroy Smith, A.I.A., has opened offices for the general practice of architecture at 250 N. 15th St., Philadelphia 2, Penn.

Paul Schweikher and Winston Elting, Architects, have reopened their offices on Meacham Rd., Roselle, Ill., following more than three years in the Navy.

LeRoy W. Thompson, Architect and Engineer, after four years in construction work for war plants, has reopened his office for the practice of architecture and engineering at 355 Congdon Ave., Elgin, Ill.

New Addresses

The following new addresses have been announced:

Walter W. De Cherrie, Architect-Engineer, 180 W. Washington St., Chicago 2, Ill.

Irving J. Gluck, 2110 Chartres St., Houston 3, Texas.

Palmer Sabin, Architect, 1009 E. Green St., Pasadena 1, Calif.

Theodore R. Sills & Co. and Sills, Inc., 39 S. LaSalle St., Chicago 3, Ill.

Firm Changes

Abbott, Merkt & Co., specialists in department store structures, have announced the election of Richard H. Tatlow III as their new president.

Samuel D. Cooper, A.I.A., R.E., and C. Reginald Perry, A.I.A., have announced formation of the firm of Cooper & Perry for the general practice of architecture and engineering, with offices at 204 Journal Bldg., Knoxville, Tenn.

Ingham & Boyd, Architects, announce that Charles S. Ingham and Thomas C. Pratt have been admitted to partnership, and the name of the firm has been changed to Ingham, Boyd & Pratt. Address, 1211 Empire Bldg., Pittsburgh 22, Penn.

Homer F. Neville and Mark S. Sharp have announced that on July 1st William H. Simon was taken into their firm, which will henceforth be known as Neville, Sharp and Simon, Architects. Address, 801 Midland Bldg., Kansas City 6, Mo.

John E. Somerville, Architect, and Milo Griggs, Engineer, have formed a partnership for the practice of architecture and engineering, specializing in industrial and commercial plants and processes. Address, 230 E. Walnut St., Green Bay, Wis.

E. Post Tooker, Lewis Bowman, Ira H. Davey and Ella V. Kelleher have announced formation of the firm of E. Post Tooker & Associates, Architects, with offices at 101 Park Ave., New York 17, N. Y.

Kurt Vonnegut, A.I.A., George Caleb Wright, A.I.A., and Ralph O. Yeager, A.I.A., have formed the new architectural firm of Vonnegut, Wright & Yeager, Architects, with offices at 1126 Hume Mansur Bldg., Indianapolis 4, and at 402 Opera House Bldg., Terre Haute, Ind. Mr. Yeager and Ralph O. Yeager, Jr., an associate in the firm, will operate the Terre Haute office. Other associates are W. C. Wright and A. J. Porteous.

James K. Wright, A.I.A., and Lennon Selby have established the firm of Wright and Selby, Architects and Engineers, with offices at 211a Hightower Bldg., Oklahoma City 2, Okla.

APPOINTMENTS

G. H. Collingwood has joined the staff of Wilson W. Wyatt, Housing Expediter and NHA Administrator, as chief lumber specialist in the Materials Supply Branch of the NHA.

Harry J. Durbin has been retained by the NHA as a special consultant on problems of the industry arising from the Veterans Emergency Housing Program.

(Continued on page 150)

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SPENCER VACUUM CLEANING
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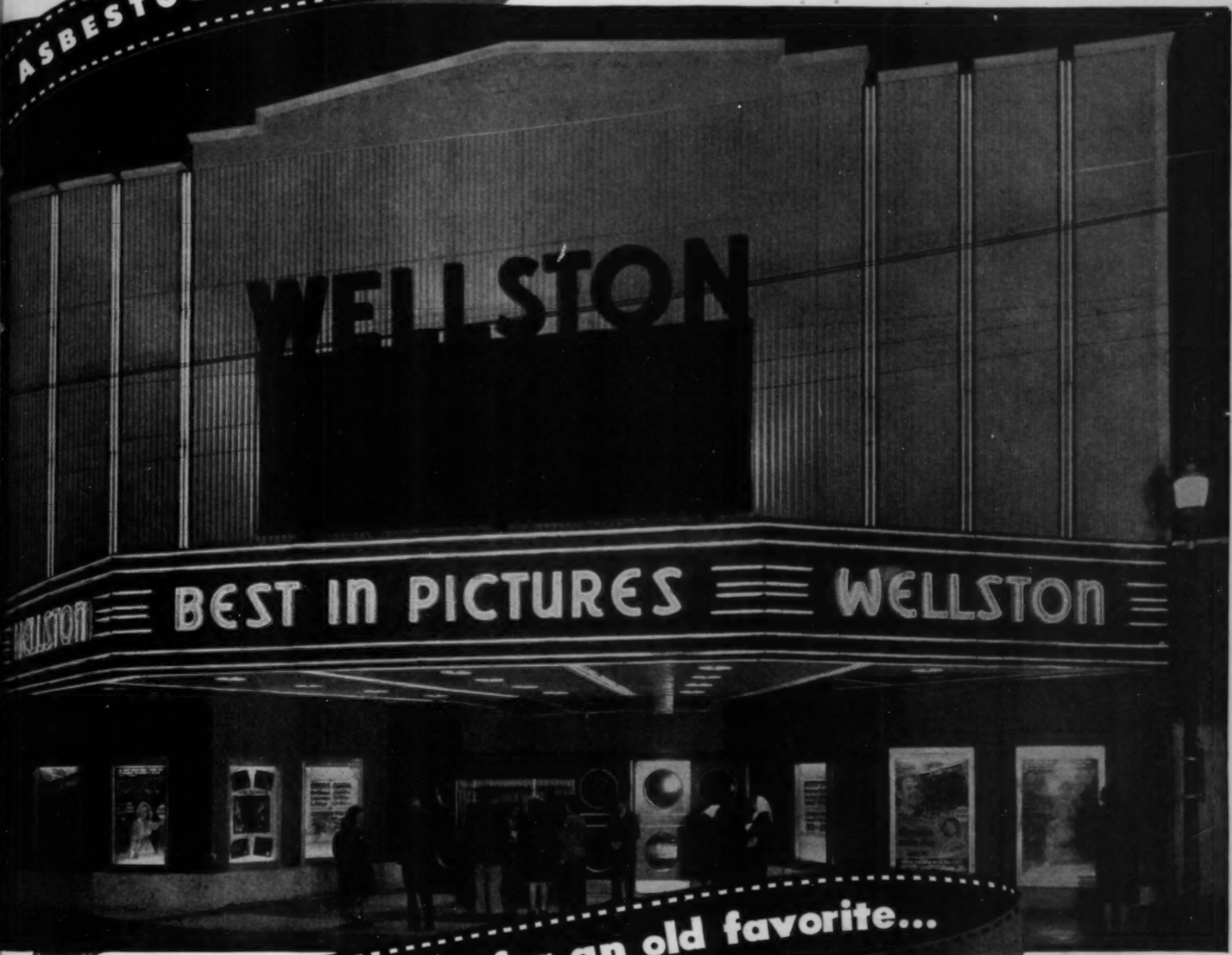
ASBESTOS IN ACTION



Here's a NEW role for an old favorite... "Century" Asbestos Corrugated

Architect:
Hugo K. Graf, St. Louis, Missouri

General Contractor:
L. O. Stocker Co., St. Louis, Missouri

Long an old favorite in industrial architecture, K&M "Century" Asbestos Corrugated now is demonstrating its decorative possibilities. Note the "different" effect achieved by the architect in designing this theatre facade.

It's an ideal material from an architect's standpoint, for in addition to its attractive appearance, "Century" Asbestos Corrugated has unlimited applications. It never needs painting (though it can be painted if desired), and is completely maintenance-free. It is fire-proof, rot-proof and vermin-proof. It goes up fast, and lasts forever, for not only is "Century" Corrugated extremely durable . . . it actually grows *tougher* with age.

Why not look further into "Century" Asbestos Corrugated? We'll be glad to supply you with whatever information you desire.

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THE RECORD REPORTS

(*Continued from page 148*)

William D. Flanders has been appointed Deputy Expediter for Rental Housing and Special Assistant Commissioner of the FHA. Mr. Flanders, on leave of absence from Fred R. French Companies of New York, of which he is executive vice president, will devote his attention to stimulating the provision of rental units under the Veterans Emergency Housing Program.

Harold D. Hauf, architect and engineer, has been appointed director of the Technical Branch of the NHA. He was formerly associated with Rousseau and McConkey at Ann Arbor, Mich., and York and Sawyer, New York, and was professor of civil engineering and architecture at Yale.

Thomas Larrick, A.I.A., has resigned his position with Ohio University to accept an appointment to the faculty of the School of Architecture, University of Florida.

Al Levinson, president of The Steelcraft Mfg. Co., Cincinnati, has been appointed technical advisor to the Wyatt Housing Program on prefabricated steel housing.

Charles A. Mayer has been appointed assistant engineer in the New York office of the Asphalt Institute.

Robert La Montagne St. Hubert, former professor at the American School of Fontainebleau, Paris, has been appointed professor of architecture at Clemson College, S. C.

Capt. Laurance P. Roberts, Signal Corps, has been appointed director of the American Academy in Rome. He was formerly director of the Brooklyn Museum.

Eugene Sternberg, Czech architect and town planner, has been appointed to the staff of the department of city and regional planning of Cornell University. Since the war, he has been active in the replanning of bombed areas in London, serving as senior assistant architect to Sir Patrick Abercrombie.

ELECTIONS

Frederick J. Mayo, Albert P. Durso, Murray E. Johnson and Donald W. Neville have been elected vice presidents of F. H. McGraw & Co., engineers and constructors of Hartford, Conn.

Officers elected at the annual meeting of the American Institute of Electrical Engineers are: president, J. Elmer Housley, district power manager, Aluminum Co. of America; vice presidents, E. W. Davis, Cambridge, Mass., O. E. Buckley, New York City, T. G. LeClair, Chicago, R. F. Danner, Oklahoma City, C. F. Terrell, Seattle, Wash.; directors, J. F. Fairman, New York, R. T. Henry, Buffalo, E. P. Yerkes, Philadelphia; treasurer, W. I. Slichter, Schenectady (reelected).

Gilbert K. Hardacre, manager commercial sales of the Public Service Co. of Northern Illinois, has been elected president of the Illuminating Engineering Society.

COLLECTOR'S ITEM

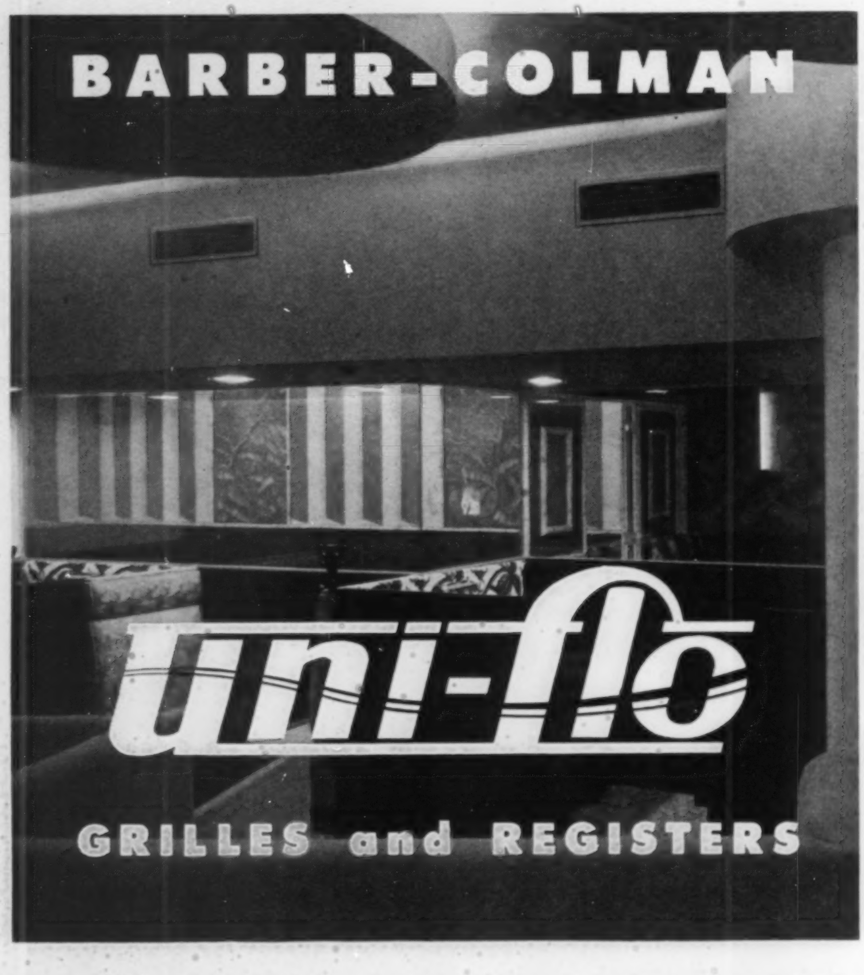
Joe E. Smay, director of the School of Architecture, University of Oklahoma, writes that he has "succeeded in securing a set of beautifully bound ARCHITECTURAL RECORDS beginning with Vol. I, No. 1, and continuing uninterruptedly through to Vol. XLIX, 1920." He adds that he thinks he will be able to complete the file through to the present date.

NHA NOTES

Veterans' Housing

A total of 225,000 houses and apartments were completed and nearly half a million started under the Veterans Emergency Housing Program in the first six months of the year, according to Housing Expediter Wilson W. Wyatt.

(*Continued on page 156*)



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...to bring lustrous, colorful beauty to modern architecture and interiors

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With Decorative Micarta, your modern interior ideas can be made to blossom forth into fascinating reality. You can make walls, counters, and table-tops gleam and sparkle with an eye-appealing beauty . . . a durable beauty that years of service cannot dim.

On tables and counter tops, Micarta resists spilled liquids and hard usage.

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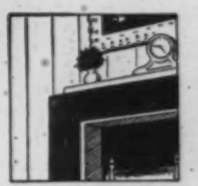
Micarta's smooth, non-absorbing surface is easy to keep clean and sanitary. It is not marred by spilled alcohol . . . or even mild acids. In addition, it resists abrasion . . . will not chip or crack under severe service conditions.



Around a fireplace, Micarta lends a modern decorative touch.

The cigarette-proof grade is guaranteed against blistering from lighted cigarettes and cigars.

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Showcases lined and faced with Micarta show off merchandise to best advantage.

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THE RECORD REPORTS *(Continued from page 10)*

in the design of the three-story air conditioned and dust-proof building, used exclusively for the manufacture of pharmaceutical preparations in ampules and injectible medicinal solutions. To guard against any contamination, the production floors are divided into small bays where different medicines are isolated during manufacture. Glass bricks replace windows, and the ventilating air ducts are equipped with ultraviolet germicidal lamps. Wherever possible, right-angle corners are eliminated, and all ledges where dust might gather are avoided within the limits of good engineering.

The individual operating bays also permit variety in temperature and humidity control. The rooms will range from 60° to 80°, and ranges of humidity from 25 to 75 per cent can be differentially maintained, according to the need of the preparation. Austin Co., Cleveland and New York, were engineers for the new building.

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won't eat through
THIS PIPE
before
6571 A.D. !

2 5/8"
2"

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It will take 4,625 years for corrosive H_2SO_4 to eat through 5/16" of Duriron. That gives you a good idea of the resistance of this high silicon iron alloy to practically all corrosives.

EVIDENCE: Here are the results of tests made on Duriron over a period of 120 days with unagitated solutions of most of the corrosives in commercial and laboratory use.

Solution		Per cent of Loss	Depth of Corrosion in Inches, per Year
95%	Sulphuric acid	.007	.0000206
25%	Sulphuric acid	.016	.0000463
10%	Sulphuric acid	.025	.0000685
70%	Nitric acid	.006	.0000188
10%	Nitric acid	.000	.0000000
5%	Hydrochloric acid	1.162	.00324
90%	Acetic acid	.006	.0000188
87%	Phosphoric acid	.006	.0000188
25%	Phosphoric acid	.010	.0000292
7.9%	Oxalic acid	.014	.0000412
9.1%	Picric acid	.005	.0000137
25%	Copper sulphate	.008	.000024
27%	Ammonium chloride	.026	.0000977

For information on the application of Duriron pipe for waste acid disposal systems write for bulletin 702D.

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DC-11

A recently completed enameling plant

Enameling Plant

Just completed for the American Central Mfg. Corp., Connersville, Ind., is a new porcelain enameling plant built at a cost of nearly three quarters of a million dollars.

Ranking in size with the top 10 such plants in the United States, the new structure features many modern and heretofore seldom used production methods along its mile-long conveyor system. An Illinois water treatment installation softens the water in the pickle room and deionizes the mill-room water. Spray booths are air conditioned.

School Expansion

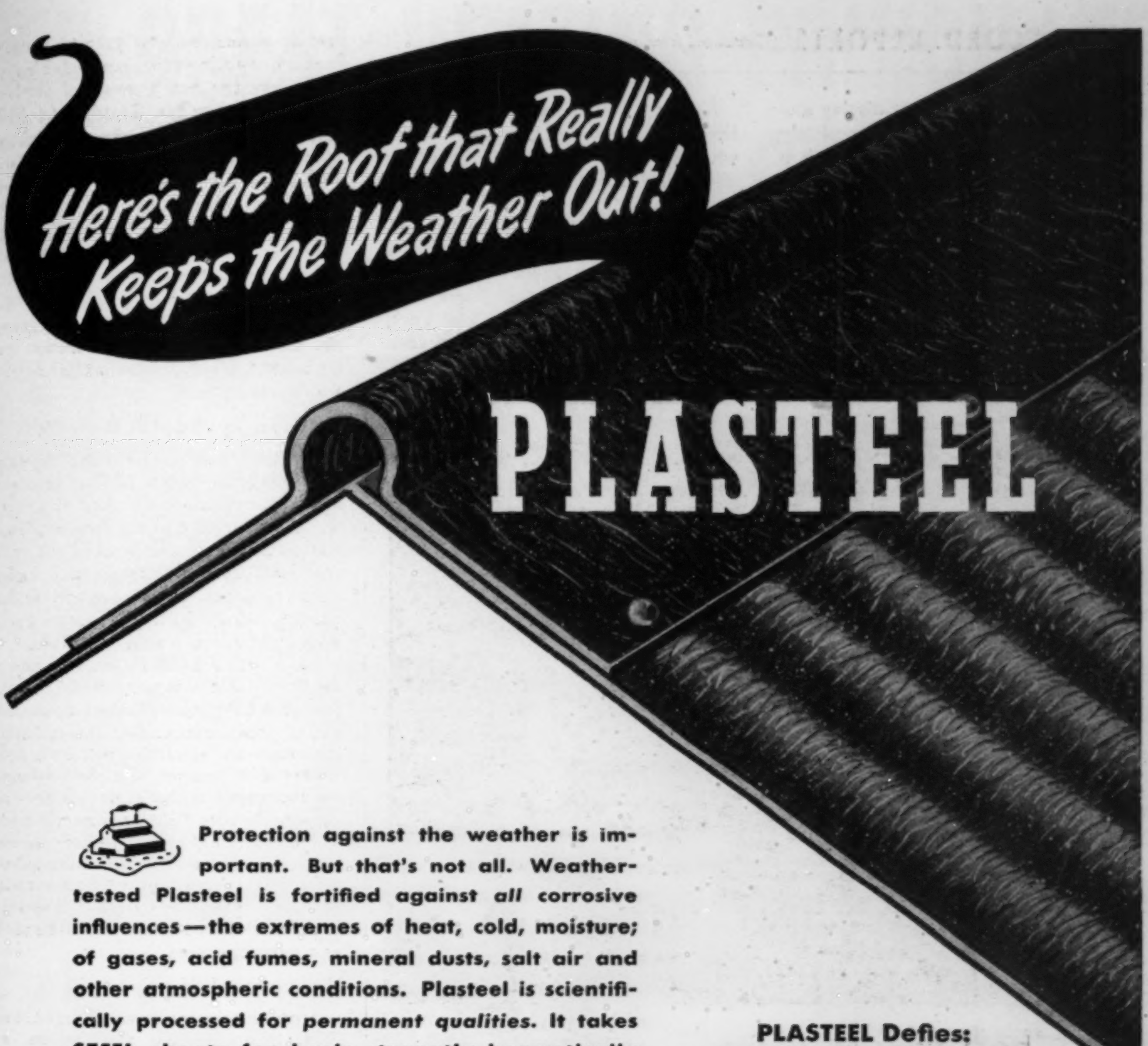
A $3,000,000 expansion program is currently under way at Boys Town, Neb., a community for underprivileged boys. The program, which will make it possible for the school to double its present enrollment of 500, includes construction of a high school building, trade school, cafeteria, administration building and 25 cottages. Each cottage will contain five dormitory rooms and a counselor's apartment, living room and study hall and two playrooms. Two warm air furnaces will be used in each cottage, one taking care of the dormitory section and the other of the living quarters; heating in both sections will be controlled by Minneapolis-Honeywell's Moduflow, intended to eliminate stratification of air. Leo A. Daly & Co., Omaha, is architect and engineer for the project.

Furniture Showroom

Approximately 38,000 ft. form the new display room and offices of the Simmons Company on Park Avenue, New York.

Display space is in two sections — the main showroom for general sales lines, and the contract and export showroom. The former, consisting of display rooms and open display space, occupies 22,000 sq. ft., comprises a total of 27 special display units. The individual displays have been given separate treatment: striped plate glass mirror backgrounds and colorful drapery to set off the tufted and richly upholstered headboards with swing beds; a colorful background of modern fabrics for the new Hide-a-Bed sofa; a terrace with trellis-work wallpaper and a real brick wall for the outdoor furniture.

(Continued on page 154)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PROTECTED STEEL PRODUCTS

General Office and Plant • Washington, Pennsylvania

THE RECORD REPORTS *(Continued from page 152)*

The contract and export display section includes a number of completely built and furnished rooms. There is a ship's cabin, portholes and all, with knotty pine paneling, to show the new Simmons ceiling berth and steel furniture, and a living room-bedroom type of ship's cabin to display a sofa which converts into a double decker wall bed. Also included are hospital rooms to show steel furniture and hospital beds, and an intern's or nurse's one-room apartment.

Architect for the new show floor was Herbert B. Beidler of Chicago, working with the Murrill Co., responsible for Simmons merchandising and styling.

Yarn Showroom

Neutral colors and a simplicity of architectural background were chosen for the new retail wool yarn display area of James Lees & Sons Co., New York. Specially designed display fixtures combine glass, plastic and oak trim, accommodate skeins, balls of yarn and style books. For skein yarn, open wall bins of glass serve the dual purpose of display unit and storage bin. Fixtures for ball yarn feature tiered trays, slanting slightly downward to allow the balls to roll forward as immediate replacements for those removed.

General illumination is a combination of recessed fluorescent and incandescent units; long-stemmed, swivel, parabolic reflectors provide accent lighting. Wall surfaces are predominantly warm gray, the carpet is gray-beige, accents are terra-cotta. Raymond Loewy Associates were the designers.

Veterans Build Homes

Tired of waiting for their housing problems to be solved, 15 Ohio veterans banded together and did their own solving. Incorporating as the Inwood Place Association, the group worked out with the First Federal Savings and Loan Assn. arrangements to finance, under the G.I. Bill of Rights, 15 six-room dwellings at Maumee, a suburb of Toledo.

Land with a 1,000 ft. frontage and a depth of 105 ft. was purchased, and two former AAF pilots, Howard Schneider and Lee Shrewsbury, now Toledo building contractors operating under the firm name of Schneider and Shrewsbury, were engaged to build the houses in accordance with FHA requirements.

The homes will be designed on a single basic plan, but each will be adapted to meet the taste of its owner. Each lot will be approximately 60 by 105 ft. Two lots in the rear of the house sites will be used as a recreation area.

Veterans' Hospitals

Army Engineers have engaged Fugard, Olson, Urbain and Neilers, of Chicago, as architect-engineers for the Veterans Administration hospitals at Iron Mountain, Mich., and Decatur, Ill. Work of preparing plans and specifications will be started immediately.

Both hospitals are of the 250-bed general medical and surgical type, and the design will be the same for each, adaptable to the site in each location. The original estimated cost of the Iron Mountain hospital is $4,633,000, that of the Decatur structure, $4,375,000.

A contract has also been signed by the Army Engineers with A. V. McIver, Cushing and Terrell of Great Falls, Mont., to act as architect-engineers for the Miles City, Mont., Veterans Administration hospital. This is a 100-bed general medical and surgical hospital estimated to cost $2,750,000.

Architect-engineer contracts for three other VA hospitals will be let in the near future: a 200-bed general medical and surgical institution at Phoenix, Ariz., and another of the same size and type at Fort Wayne, Ind.; and a 1,000-bed neuropsychiatric hospital at Houston, Tex.

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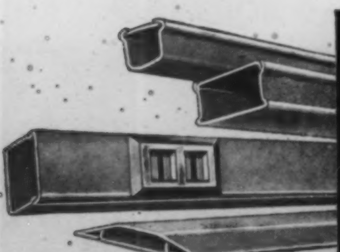

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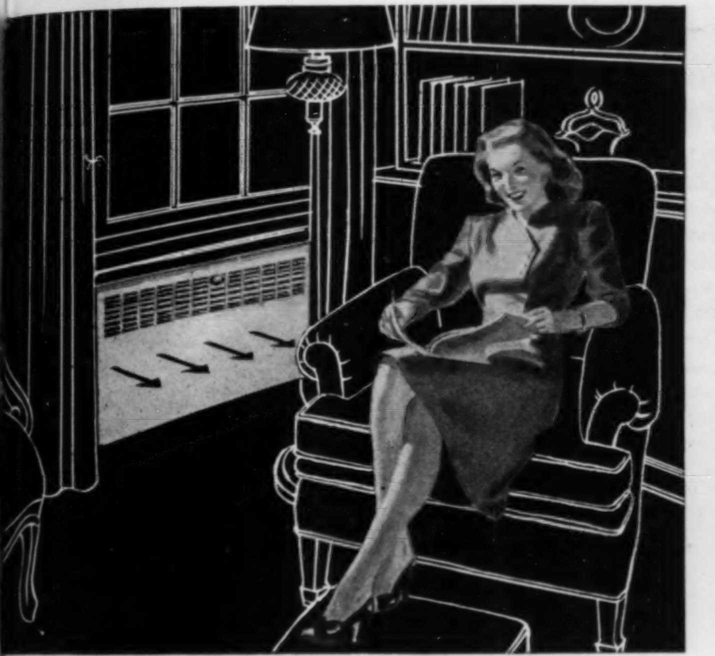
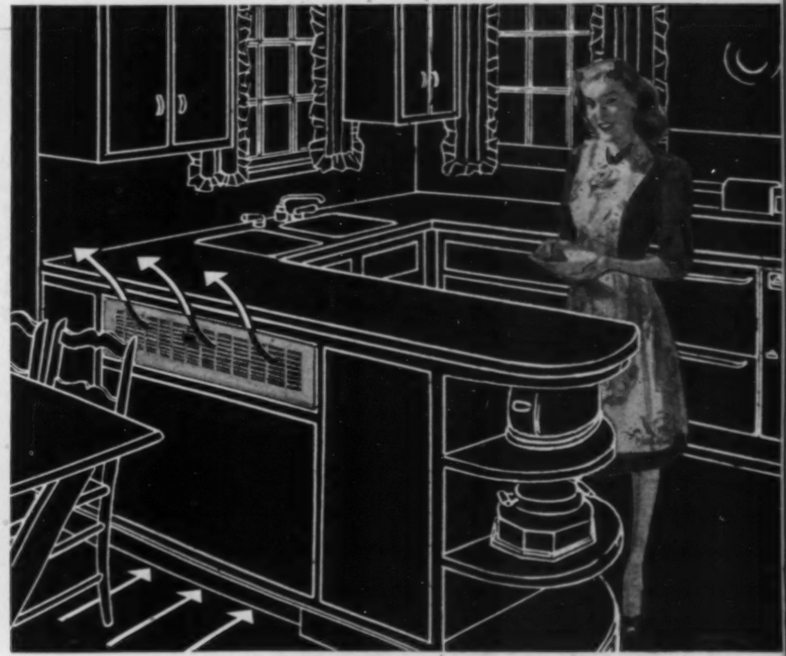
that's what Modine Convector Radiation offers you!





1 RADIANT HEATING

Notice those arrows? That's radiant heat... mild radiant heat coming from that Modine Convector panel in just enough quantity to offset heat loss from window areas. But we don't stop with just *radiant* heating. To it we add...

2 CONVECTION HEATING

Convection heating. The hot water or steam circulates through the copper heating unit, draws the cooler, floor-line air into the bottom of the convector where it's warmed, rises, and is then gently circulated throughout the room.

RESULT: A modern, blended heating system for modern living! • A heating system that gives you *individual* room control, that responds almost instantaneously to sensitive automatic controls . . . that gives you gentle air circulation without the use of moving parts that wear out. • Yes . . . the dependable heating comfort, distinctive charm, space-saving, cleanliness and long service life of Modine Convector Radiation is now available for moderate cost homes and apartments. Look for Modine's representative in the "Where to Buy it" section of your phone book. • Write for complete information and free descriptive literature. MODINE MANUFACTURING CO., 1773 Racine St., Racine, Wis.

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CLOSE TEMPERATURE CONTROL

EASY TO INSTALL

ADDS TO LIVING SPACE

PRICED FOR TODAY'S HOMES AND APARTMENTS

Modine

CONVECTOR RADIATION

The Modern "proved by use" heating method

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VENUS
DRAWING PENCILS

American Lead Pencil Company, Hoboken, New Jersey

THE RECORD REPORTS

(*Continued from page 150*)

Of the units completed, 153,000 are new permanent houses and apartments, and 72,000 are temporary re-use housing, conversions and trailers.

College Housing

With 76,000 temporary housing accommodations for student veterans completed or under construction and another 27,000 in preliminary stages, the FPHA has announced that all allocations of emergency temporary housing to be supplied to schools at federal expense under existing authorizations have now been made.

The total of 103,000 accommodations for student veterans and their families has been allocated to 675 educational institutions. These accommodations represent about half of the veterans' temporary housing to be provided this year as part of the Veterans Emergency Housing Program. The balance under terms of the Mead resolution amending Title V of the Lanham Act, is to be supplied to local communities for emergency housing of other veterans and the families of men still in service.

Premium Payments

Premium Payments Regulations Nos. 5, 6 and 7, covering convector radiators for residential heating, and the Southern and Northern hardwood flooring industries, respectively, have been issued.

Regulation No. 5 provides for incentive payments of 10 cents per "shipment unit" produced in excess of established quotas. Together with other government action, including a 10 per cent price increase, it is expected to enable the industry to expand considerably and perhaps even double production of convector radiators for residential heating within six months.

Regulations Nos. 6 and 7 authorize manufacturers participating in the plan to pay bonuses to their suppliers of certain grades and species of hardwood lumber. A production increase of about 50 per cent within the next few months is expected to result.

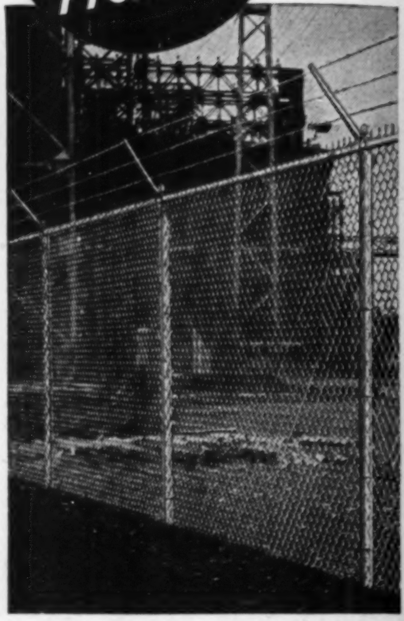
Access to Timber

The allotment of $1,234,000 to Secretary of the Interior J. A. Krug for the construction of 222 miles of access roads to out-of-the-way timber lands on Indian reservations to boost production for the Veterans Emergency Housing Program by an estimated 17,070,000 board feet this year has been announced by Housing Expediter Wyatt.

Since about 10,000 board feet of lumber are required for a six-room frame house, Mr. Wyatt points out, the additional lumber from Indian lands this

(*Continued on page 158*)

If Fence is one of Your Problems



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Self-cleaning scraper type design presents continuously clean walking surface. Available in ⅛", 3/16" and ¼" thicknesses. Tough rubber compound and shredded fabric mixture assures slip-proof service, wet or dry, quiet cushioning and long life under hard traffic conditions. Supplied cut to fit your specifications or in rolls 34" wide to required lengths.

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Jet-black, long-wearing, non-blooming floor covering especially adapted to indoor service—halls, corridors, locker rooms, aisles. Available now in ⅛", ¼" and ⅜" thicknesses in variable widths cut to specified lengths or in 25 yards rolls. MELFLEX High-Quality corrugated rubber matting is fabric backed to prevent stretch. It provides exceptional resistance to slipping.

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STEP TREADS Molded to Fit Over Step Edge . . . 7/32" Thick

Heavy molded treads of shredded fabric and tough rubber compound. One piece. Fits over step edge, cushioning and giving sure-grip SAFETY. No screws or metal strips. Applies easily with MELASTIC waterproof cement to any step material—wood, stone, metal, tile or composition—and stays "put". High frictional resistance wet or dry. Supplied cut to fit your step specifications. . . . No trimming, no waste.

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THE RECORD REPORTS

(*Continued from page 156*)

year is the equivalent requirement for approximately 17,000 houses.

Negro Housing

Eight Southern states are making available for Negro families 21.6 per cent of new housing units already planned under the Veterans Emergency Housing Program, according to a survey by the NHA. The eight states are Alabama, Florida, Georgia, Mississippi, Tennessee, North and South Carolina and Virginia.

Goals of new construction needs in 430 urban centers have been set through Mayors' Emergency Housing Committees, and a poll of these committees indicates a substantial percentage of such units will be available to Negroes.

Memphis, Tenn., leads the nation in the percentage of such new housing units. Its goal is 8,500 units of residential construction with at least 3,500 available to Negro families. The second highest percentage quota is in Meridian, Miss., which plans 2,000 units of which 800 will be available for Negroes.

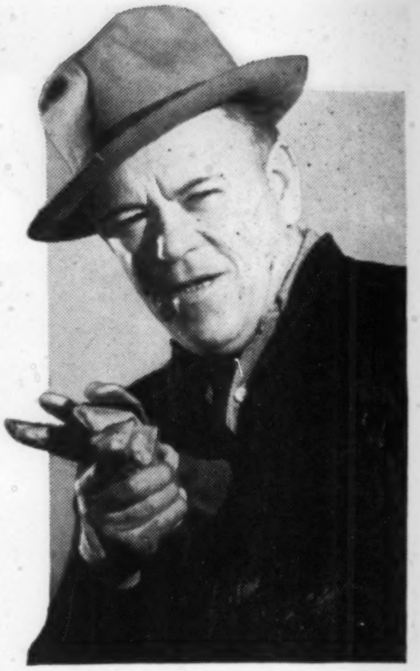
In volume of new housing planned to accommodate Negroes, New York City leads the country with a total of 6,172 units. Already under construction for the Metropolitan Life Insurance Co. are the Riverton Houses with 1,232 units, and the James Weldon Johnson Houses for the New York City Housing Authority with 1,310 units. Other projects planned include: Amsterdam Houses, 1,024 units; Abraham Lincoln Houses, 1,286 units; Stephen Foster Houses, 1,320 units.

HOUSING RESEARCH

A Low-Cost Housing Research project has been organized at Louisiana State University as a part of the Engineering Experiment Station of the University. The purpose is "to determine a better method of substantial construction, a better selection of building materials and equipment, a better type of plan and design, a better layout of utilities, at a minimum cost." The program will consist of: scientific study and research on new materials and developments, with publication of results; cooperation with all phases of the building industry; and demonstration of construction methods.

LANDSCAPE GROUP

The Washington Society of Landscape Architects has been organized in Seattle to further better design, construction and maintenance standards for garden owners and for all other landscape projects. Officers are: president, Cash M. Beardsley; vice president, Willard E. Morgan; secretary-treasurer, Roberta Wightman. Edwin W. Grohs is the architect and engineer representative.



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